Scientific American.

THE ADVOCATE OF INDUSTRY, AND JOURNAL OF SCIENTIFIC, MECHANICAL AND OTHER IMPROVEMENTS.

VOL. XIV. NEW YORK, SEPTEMBER 25, 1858. NO. 3.

THE
SCIENTIFIC AMERICAN,
PUBLISHED WEEKLY
At No. 128 Fulton street, (Sun Buildings,), New York,
BY MUNN & CO.

O. D. MUNN, S. H. WALES, A. E. BEACH.

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Single copies of the paper are on sale at the office of publication, and at all the periodical stores in this city Brooklyn and Jersey City.

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Explosions.—Steamboat Law Enforced.

In the early part of this year there occurred quite a number of steamboat explosions on the western rivers, forcing the conviction upon us that they were due to dereliction of duty on the part of Inspectors. This opinion we expressed, with somewhat severe remarks, in several instances in our last volume. Recent investigations have confirmed our opinions, and it affords us pleasure to announce that the steamboat law of 1852, passed to ensure greater safety of life, has just been vindicated in the dismissal of a delinquent board of local Inspectors.

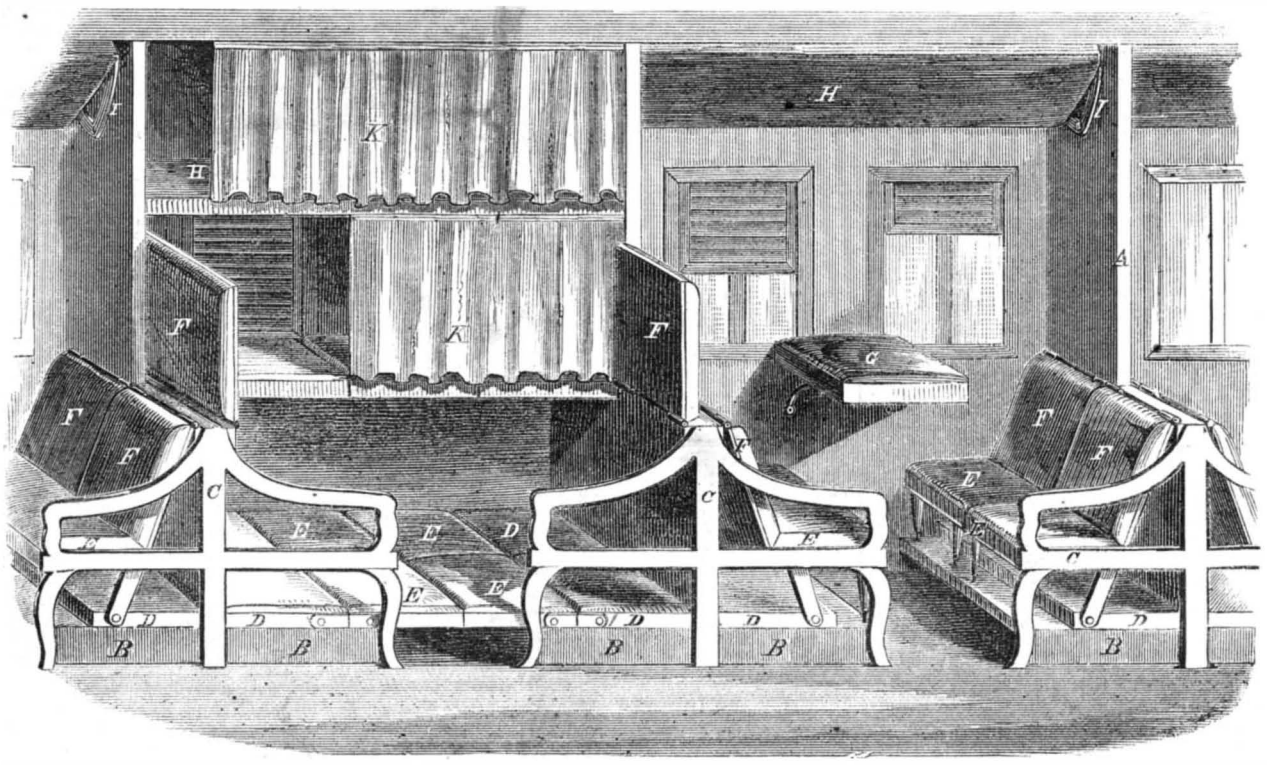
In the month of January last, the steamboat *Fanny Fern*, of Pittsburgh, exploded her boilers, while on a trip on the Ohio river, and the cause was proven to be a want of water in one of the boilers, while one of the engineers (J. M. King), was on watch. The local Inspectors, Messrs. J. S. Dickey and Andrew Watson, did not give the case a thorough examination; and although the outrage was very flagrant, they did not revoke King's license. The captain—Thomas Rogers—complained of them some months afterwards to the Secretary of the Treasury, who referred the matter to the supervising Inspector—Benjamin Crawford, of that district, who gave it a careful examination, and reported to the Secretary that the local Inspectors were highly censurable. Upon the rendering of his report they were dismissed from office, and Capt. R. J. Grace, of Pittsburgh, and Thomas Snowden, of Brownsville, have been appointed to fill their places. Mr. Crawford has endeavored to carry out the provisions of the law in its integrity, and we hope the decisive action of the Secretary of the Treasury will be a warning to other delinquent Inspectors, and that it will spur them up to increased vigilance in the performance of their responsible duties.

Cure for Musquito Bites.

According to an exchange, spirits of hartshorn, if applied immediately, constitutes a thorough antidote for the bites of musquitos, or any poisonous insect or animal. Travelers should govern themselves accordingly, while every summer resort that is liable to a visitation of musquitos, gnats, and other offensive and annoying insects, should keep constantly on hand a liberal supply of the antidote. Lime water is also believed to produce the same salutary effect, and if neither of the articles named can be obtained, any strong lye of wood ashes and water, may be resorted to with advantage.

A Brussels paper says that Dr. Andre Schleiermacher, one of the greatest scientific notabilities of Germany, died suddenly at Darmstadt, on the 11th July.

WOODRUFF'S RAILROAD CAR SEAT AND SLEEPING COUCH.



For several years after the introduction of railroads in this country, the accession to the speed of traveling was so great, that passengers were satisfied with traveling in the day time only, but the business of railroads for the past few years has been gradually changing from day to night travel, particularly among business men who cannot afford to lose the time required for exclusive day traveling. Hence we took occasion in our issue of June 19th to set forth the great necessity of our railroad corporations furnishing the traveling community with sleeping accomodations, intimating that such a step on their part would add materially to the business and travel over their respective roads. Acting upon our suggestions many Western railroads have provided means to this end, by constructing the seats of their cars after the improved plan patented by T. T. Woodruff, by which they can be readily converted into comfortable sleeping couches, partaking in a great measure of the character and privacy of a state room.

Our illustration represents a perpective view of a portion of the interior of a railroad car, showing the seats in the position in which they are arranged when intended to be occupied by the passengers in a sitting posture, and also when changed to form double and single sleeping couches or berths. A A are a series of transverse partitions, arranged on either side of the car, at the required distance apart to admit of berths or couches being formed between them. B is a raised platform extending from the partition A, and its lower portion, C, next the longitudinal passage-way through the car, to the part between, alloted for the feet of the passengers, when sitting, upon which, next the partitions, are secured, horizontal cushioned frames or planks, D, to the ends and middle of which are jointed by connecting bars the seat bottom cushioned frames, E, to the surfaces of which are secured legs, which serve to support one edge of the said seat bottoms, when either in the position to be sat upon, as represented at the right hand of our engraving, or in the horizontal lowered position to assist in forming a double sleeping berth, as shown at the left of the said engraving. When they are arranged to form seats, they are raised so as to bring their legs in openings next the edges of the raised platforms, B; and cushioned backs, F, hinged to the tops of the lower part, C, of the partitions, A, and to said partitions, A, are brought to the proper inclined positions in relation to them to serve as back supports. G are horizontal platforms projecting from the sides of the car, midway between the partitions, A, so as to form a rest or table for the passengers to rest upon when sitting down, and also in connection with the cushioned backs, F, immediately opposite, a single sleeping couch or berth, when the said backs are raised on their hinges so as to bring them on the same horizontal plane with the rests or platforms, G, to the edges of which they are firmly secured by suitable sliding bolts beneath. H are other longitudinal cushioned berth or couch platforms, arranged between the partitions, A, immediately above the single berth or couch formed by the table or platform, G, and backs, F. These berths or couch platforms, H, are suspended by curved bars, I, on pins or bolts inserted in the partitions, A, which admit of their being lowered to the suspended position represented at the left of our illustration, to form a sleeping berth or couch, or turned and raised immediately next the roof of the car when not employed in this capacity, and thus removed entirely out of the way of the passengers, and made to embellish rather than injure the interior appearance of the car.

To the roof of the car immediately above the edge of the berth or couch platform, H, and to the edge of this berth or couch platform, are attached horizontal wire rods which pass through wire rings on the edges of the ornamented curtains, K, which are suspended and extend downward the required distance to entirely protect the single berths from view when drawn over the wire, and thus insure privacy to their occupants; and when the berth or couch platform, H, is turned and elevated these curtains can be folded above them so as to be entirely hid from view.

Cars constructed after this admirable plan are now in operation on the Buffalo and Erie, Cleveland and Erie, Cleveland and Cincinnati, Michigan Central, Michigan Southern, Ohio and Mississippi, Chicago and Galena Union, and Chicago, Fort Wayne and Pittsburgh Railroads, and have received the most unqualified approval of all who have enjoyed their advantages. The great beauty of this invention is the ease and little labor with which the seats are transformed into sleeping berths or couches, which in point of comfort are all that can be desired. Another important feature embraced by it is that should only a portion of the passengers desire to sleep, they may do so, without at all interfering with the comfort of the others; while the curtains, K, may be hung so that the occupants of the berths or couches may be partially or wholly secreted from observation, and as much at their ease as they would be in the berths of one of our best regulated steamers.

Any further information desired may be obtained by addressing the inventor and patentee, T. T. Woodruff, care of O. W. Childs, Salina, N. Y.

"Vital Force or Momentum."

The Philadelphia *Ledger*, in a brief article on the above topic, seems to consider that vital force and momentum are the same thing. Mechanical philosophers make a distinction between them: thus, steam confined in a boiler is *a force;* the steam moving a piston is a *power;* the pressing weight of the steam multiplied into the velocity of the piston is *its momentum*. Electricity is a force, but as it does not possess gravity, we cannot apply the term "momentum" to it. The vital form of organisms—whether electrical or nervous—is imponderable, and therefore cannot be correctly called momentum. In many cases, it is positively necessary to make these distinctions.

THALES was the first natural philosopher.

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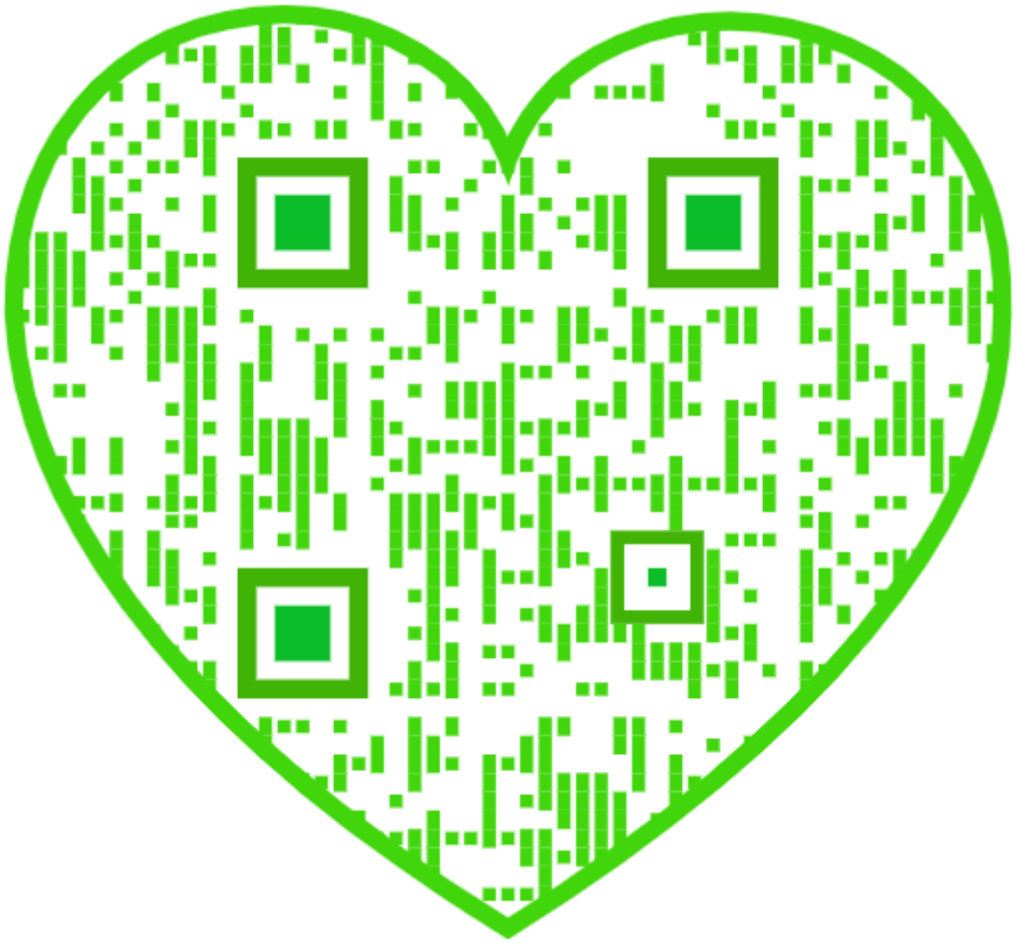

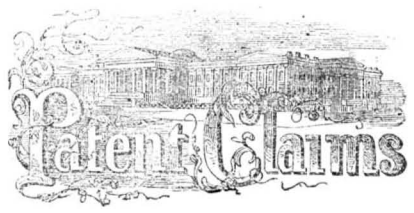

Issued from the United States Patent Office
FOR THE WEEK ENDING SEPTEMBER 14, 1858.

[*Reported officially for the Scientific American.*]

*** Circulars giving full particulars of the mode of applying for patents, size of model required, and much other information useful to inventors, may be had gratis by addressing MUNN & CO., Publishers of the SCIENTIFIC AMERICAN, New York.

WASHING MACHINES—John Allen, of Galena, Md. : What I claim is so dressing with zig-zag ribs, F F the bottom of the tub and under surface of the rubbing disk, that the approximating angles, b, of the ribs, F, of the disk and tub shall form rhomboidal figures wherein the clothes are subjected to an angular squeezing and oblique rubbing action, and the approximating knuckle or wedged shaped ends, a, of said angles shall, when the motion of the disk is reversed, alter the rhomboidal spaces and pummel and loosen up the clothes, so as to allow a fresh supply of cleansing water to circulate through them, and thus prepare them for a succeeding angular squeezing and oblique rubbing action, substantially as and for the purposes set forth.

[An engraving and description of this invention will be published in our columns in a few weeks.]

WASHING MACHINE—Wm. T. Armstrong, of Sandwich, Ill. : I claim the combination of the rubber and the slide, F, with the stationary shaft, G, substantially as and for the purposes set forth.

REVOLVING FIREARM—Fordyce Beals, of New Haven, Conn, : What I claim is constructing, applying and arranging the canter pin, F, and the ra mer lever, H, substantially as described, so that the former is locked in place by the latter, when the latter is close to the barrel, and that the former is permitted to be withdrawn by bringing the latter to a position in which the rammer will not interfere with the cylinder.

[This invention relates to that kind of revolver, the axis of whose rotating many-chambered cylinder is arranged parallel with the bore of the barrel. It consists in so constructing, applying and arranging the center pin on which the cylinder rotates, and the lever which operates the rammer, that the pin is secured in place by a shoulder provided for the purpose on the said lever, when the lever is brought to a position close under the barrel, and that the pin can be withdrawn to allow the cylinder to be taken out when the lever is moved down to a position not far enough from the barrel to let the rammer interfere with the cylinder.]

LADIES' HOOP SKIRTS—Samuel Beberdy, of Philadelphia, Pa. : I claim the combination of a spiral stay, B, with the fabric which constitutes a lady's skirt, when said stay is formed by winding a flexible strip or rod made of one piece or a series of pieces spliced or united together, continuously round the skirt from the bottom to the top of the body of the same, substantially as and for the purposes set forth.

[By thus making skirts of one stay, the clasps which are used at the meeting ends of the ordinary circle stays are dispensed with, the cost of manufacturing a series of stays and applying clasps to the same greatly reduced, and the symmetrical set of a lady's dress greatly added to, by the spiral stay, because one spiral supports another throughout the skirt, and consequently while in the act of sitting every part of the skirt yields or winds spirally round the body in a manner to contract the diameters of the spirals, and elongate the skirt, and thus allow the wearer to sit comfortably, and with a consciousness that herdress presents a rounding or symmetrical appearance on all sides.]

JOINTS FOR T-RAILS—E. U. Benedict, of Horicon, Wis. ; I claim the combination of the rails with the side plates, B B, by means of the slots, a a, in the plates, the recesses, b b, in the bases of the rails, the gibs, C C C', and the keys, D D D, tho whole applied and operating substantially as set forth.

And I also claim forming the gib, C', applied at the juncture of the rail, with the downward rectangular projection, g, to serve as a stay between the plates, substantially as set forth.

[The adjacent ends of T-rails are united by means of two upright plates which are applied one on each side of the rails, and slotted to receive portions of the rails left projecting between notches cut in the base. The notches receive portions of the plates between the slots, and the rails and plates being secured together by gibs and keys passing through the plates n such a manner as to support the ends of the rails.]

MANUFACTURE OF SKIRTING MATERIAL—Ernest Bredt, of New York City : I claim as a new article of manufacture the looped fabric described, having loops formed in it at intervals by combining the loop-forming material with the web in the process of weaving, substantially as set forth.

ENDLESS SECTIONAL SAWING MACHINE—Harvey Brown, of New York City: I claim, first, The form and manner of constructing the sections of my saw, substantially as set forth.

Second, I claim the mode of inserting the teeth in the saw in the manner set forth.

Third, I claim the guide plate, E, constructed and arranged as described, when used in connection with the saw, as set forth.

SAW FILER—A. H. Burdine, of Chulahoma, Miss. : I claim, first, A file, F, constructed spirally on a revolving axis, n, so that a space, i, exists between the two ends of the spiral or screw thread constituting the file, substantially as and for the purposes set forth.

Second. The combination of one or two of the above specified files, F, with two conical rotating files, G G, in a machine of the character specified, substantially as and for the purposes set forth.

[A full description of this invention appears on another page.]

PRINTING PRESSES—J. A. Campbell, of New Orleans, La. : I claim the teeth placed on a portion of the perimeter of the roller, M, for the purpose of pushing the card through the opening above the perpendicular grooves, c c, by the operation of these teeth on the surface presented by the front card of the pack, in combination with the rollers, f f, substantially as specified.

Also, The adjustable plates, g g, as specified, for the purpose of regulating the opening through which the cards have to pass, to the thickness of the card.

Also, The combination of the stationary arm, T, ball and socket, Z, rod, U, short arm, V, and the working joint, Y, for the purpose of giving the inking cylinder a lateral motion.

LANTERN ATTACHMENT TO CAPS—J. C. Cary, of New York City : I am aware that lanterns have been previously attached to caps. Hunters use such a device in deer shooting, and miners also attach lights to their hats. I do not claim broadly, therefore, the simple combination of a cap and lantern irrespective of the construction and adaption of the parts, as described.

But I claim the lantern, C, constructed as shown, to wit : the fountain, C, and lamp, D, connected by the tube, f, and enclosed within the case, d', which is provided with the handle or bail, and straps, i j, for the purpose of being attached to the cap, A.

[This is a convenient invention for railroad conductors, firemen and others; it is a lantern attached to a cap, so that it can be worn on the head, and where it will burn as well, shedding light around, as if held in the hand.]

RAILROAD CAR COUPLING—J. W. Corey, of Crawfordsville, Ind. : I claim the arrangement and combination of the hinged coupling hook, B e, slotted connected link, C d, and double inclined plane, D, substantially as and for the purposes set forth.

MOLDS FOR MAKING WARP DRESSER GUIDES OF GLASS OR OTHER PLASTIC ANTI-CORROSIVE MATERIAL—Alfred B. Corey, of Franklin, Conn. : What I claim is my improved mold as made with plunger cavities, e e e, of the kind described, in its bed plate, B, a body or body and flange matrix, d, a removable plunger guide, C, or its equivalent, and a plunger, D, provided with a series of projections or cores, g g, the whole being combined and arranged substantially in manner and for the purpose as described.

WARP DRESSING GUIDES—A. B. Corey, of Franklin, Conn. : I claim a new or improved manufacture of warp dresser guides made of glass or its equivalent, and by molding it on smooth cores and subsequently reducing the plate or the bars or projections made by the cores, substantially as described.

I also claim making a warp dresser guide in several separate sections, A A, combined and applied in one frame, essentially as and for the purpose explained.

STEAM HAMMER—Patrick Danvers, of New York City : I do not claim the combination of the reciprocating cylinder and stationary piston, as that constitutes what is known as the "Condie Steam Hammer," nor do I claim attaching the hammer to a piston working in a stationary cylinder, as that constitutes "Nasmyth's Steam Hammer."

But I claim the combination with the reciprocating cylinder or ram, 3, which constitutes or has attached to it the hammer block. and the stationary piston, 5, of the piston, 4, and the external steam cylinder, 2, provided with a proper system of valves, the whole operating substantially as specified.

[For more information regarding this invention, see another column.]

SHINGLE MACHINE—Augustus Day, of Detroit, Mich.: I claim, first, The butting or squaring knife, V, operated by the curved arms, T, and used in connection with the stationary knife, V', and adjusting clamps, W.

Second, The combination of the riving knife, E, jointing cutters, H H, planers, M M, and Z Z, and butting or squaring knives, V V', the whole being arranged to operate as and for the purpose set forth.

[By the employment of a riving knife jointing cutters, planers, and a squaring knife, arranged and operated in connection with retaining dogs, and other concomitant parts, the various operations of splitting, jointing, planing and squaring are all performed by the one machine and at one operation.]

MOLD PLOW—Adam Defenbaugh, of Walnut Run, Ohio ; I am aware that underground ditching plows have been used, but they have not been sufficiently under the control of the attendant to make them of much use, beside they only make a ditch parallel with the surface of the ground, while mine will form a ditch with a regular grade or descent.

I claim so hanging the beam, D, wheels, C C, and underground plow, H, to each other as that the conductor of the machine may, at any time, without seeing the plow, raise and lower it so that the ditch shall have a regular descent regardless of the undulations of the ground, underneath which it is formed, and over which the plow passes.

I also claim, in combination with the underground plow, the scoring wheel, m, for forming a secondary trench in the bottom of the ditch for the purpose set forth, and the friction rollers for relieving it, as represented.

TELEGRAPH INSULATORS—M. G. Farmer, of Salem, Mass., and J. M. Batchelder, of Cambridge, Mass. : We claim the iron wire supporter or hook in combination with a screw insulator made of hard india-rubber, and attached to the hook or shank, in the manner described.

COMBINATION OF A GOVERNOR WITH A SLIDE VALVE—Richard Gornall, of Baltimore, Md. : I do not limit myself to any particular character of taper steam ports, as various forms of taper ports might be made to answer the end in view, nor do I limit the use of my invention to flat surfaced slide valves, as it can be applied in connection with a cylinder valve or a valve forming part of a circle with equal advantage.

I claim, first, The combination in the manner substantially as specified, of the governor with a slide valve, which is constructed, arranged and operating as specified for the purposes set forth.

Second, Giving the crank-pin, F, by which the rock shaft, D, is operated, a flaring or V-shape, in combination with the oblique or bevel ends, d, of the slide valve and the enlarged slot, c, of the connecting rod, I, substantially as and for the purposes set forth.

[This invention provides an exceedingly simple and effective automatic cut-off dispensing with the complicated arrangement of lifters, cams and connections used in other cut-offs which have preceded it. It also ensures the working of the valve with a "lead" just the same as it would were it not arranged to act as a cut-off. We regard this as an invention which exhibits ingenuity and utility.]

ROTARY STEAM ENGINE—John Harthan and Ezra Harthan, of Timbersbrook, England. Patented in England Jan. 26, 1858 : We are aware that totatory engines, consisting of wheels having a number of projections formed or fitted upon their peripheries and actuated by the impingment of steam or air against such peripheral projections or chambers, have long been known in this country, and therefore we lay no claim to the principle of such arrangement, We may also observe that we do not confine or restrict ourselves to the precise details or arrangements which we have had occasion to describe or refer to as variations may be made therefrom without deviating from the principles or main features of our said invention.

But we claim, first, The system or mode of obtaining motive power by causing steam or air to inpinge upon a series of chambers with curved bottoms arranged around a wheel at or near the periphery thereof, as described.

Second, The general constructions and arrangements of machinery or apparatus for obtaining motive power, as described.

MACHINE FOR CUTTING DOVETAILS—T. E. King, A. King and E. King, of Cherry Valley, Ohio : We claim the parts shown in Figs. 4, 5, 7 and 8, arranged and operating as described for the purpose of cutting the mortises or gains in the drawer fronts.

We also claim the instruments shown in Figs, 9 and 10, arranged and operating as specified, for the purpose of cutting the end pieces of drawers, substantially as set forth, these several devices being arranged to operate conjointly in the manner and for the purpose set forth.

HORSE POWERS—G. Hely, of Rochester, Wis. : I do not claim the mere connecting the several teams, as such is not new.

But I claim the combination of the sliding levers, D, and the loose coupling bar, E, with the draft chains, substantially as set forth.

GATE HINGE—T. Hendrick, of Clyde, N. Y.: I claim the employment of an angle plate having an oblong slot cut vertically through its horizontal angle in combination with a plate whic has the pintle or axial pin of the hinge on its lower edge, and a shifting projection on each of its side edges, substantially as and for the purposes set forth.

[This simple invention provides a hinge which will cost but little if any more than the ordinary hook and eye hinge, and yet will be capable, when used in connection with an ordinary hook and eye or other hinge, of allowing the gate to open hoth ways or inward and outward, and will invariably cause the gate to close automatically, or not allow it to remain stationary in any other but a closed condition unless held so by a cord or hook.]

GAS BURNERS—L. E. Hicks, of New York City : I claim, in the construction of gas burners which have caps made with a crown concave internally applied to them, making the outer surface of the crown of the cap flat or nearly flat and the orifice, d, through which the gas escapes, of circular form horizontally and with its edge curved in the path of two vertical circles as delineated in the sectional view of the drawing for the purposes set forth.

[A notice of this improvement will be found in another column.]

BUILDING WALLS UNDER WATER—Wm. H, Horstmann, of New York City : I claim, first, The sack or compartment formed by cloth or some equivalent thereof to produce slack water in a current or other movable water, and protect the current from being washed away and wasted before it is hardened as fully set forth.

I also claim, in combination with a flexible inclosure the panels as above specified, and supporting the same by spiles in the manner and for the purposes set forth.

I also claim the cement feeder, constructed and arranged substantially as and for the purpose specified.

CUTTING APPARATUS FOR HARVESTERS—Charles Howell, of Cleveland, Ohio : Disclaiming the construction of guard fingers as patented by Cyril Wagner, June 24, 1856, I claim, first, A finger formed with a frog shaped concavity on the under side of the knife, having outlets on its sides in front of the finger bar in the manner and for the purposes set forth.

Second, A sickle or knife having a series of curved openings, l, or their equivalents, formed on its rear, and underside when used in connection with guard fingers provided with a D-shaped rest, K, or its equivalent, the whole being arranged, constructed and operated in relation to each other in the manner and for the purposes substantially as set forth.

HEATING APPARATUS FOR THE MANUFACTURE OF CEMENTED SOLE SHOES—Jacob Jenkins, of Charlestown, Mass. : I claim an improved heating apparatus for the manufacture of cemented sole shoes, consisting of the box, A, provided with door, B, glass front, b, deflector, f, as described, openings, d, and lamp, C, or its equivalent for heating, arranged and operating substantially as and for the purpose set forth.

CHURN—Daniel Johnson, of New York City : I claim the employment of two or more rollers when placed horizontal. and with their peripheries touching or nearly touching one another, in combination with a revolving dasher, which is arranged underneath said rollers and in the same box or chamber with the same, substantially as and for the purposes set forth.

[This invention consists in the employment of two or more rollers placed horizontally with their peripheries nearly touching one another in combination with a revolving dasher, which is arranged underneath the rollers in the same box. By this means it is thought butter can be produced very quickly, and left in a sweet and palatable state.]

RAILROAD CAR COUPLINGS—C. P. Kenyon, of Wilson, N. C. : I claim the combination of the grooves, i i, supporting ridges, C C, lateral grooves, V V, pusher, s, and block, S, arranged and operating substantially as described.

Second, I claim adjusting the coupling to suit cars with platforms of different hights by means of the slide, E, and a bolt passing through the holes, F, arranged and operating substantially as described.

DOOR LOCK—Jacob Kinzer, of Pittsburg, Pa. : I claim the use of a plate on the inside of a lock, which, by the insertion of the key, is moved to the other side of the lock and closes the opposite key hole, substantially as described.

I also claim the use of said plate upon which to raise or form circles or segments, wards or pins, or their equivalents, which correspond to the formation or changes of the key, thereby facilitating and cheapening the manufacture of the lock, substantially as described.

BULLET MACHINE—J. A. Knight, of St. Louis, Mo. : I do not claim the combination of the stationary and swinging mold bars.

But I claim, first, Arranging the movable mold bars, so that in opening the molds they move not only away from the stationary mold bar, but to some extent in a direction transverse to the said stationary bars as set forth, and illustrated in Fig. 1, to produce the dragging action described, for the purpose of loosening the bullets from both parts of the molds.

Second, Arranging the said swinging mold bars between center screws, I I, applied in such manner as to provide for their adjustment longitudinally to obtain a perfect registration of the two halves of the several molds.

[A notice of this improvement will be found in another column.]

MACHINES FOR WORKING CLAY—Henry Leguay, of St. Louis, Mo. : I claim as my invention, in mills or grinding gears for grinding clay or other substances, making openings and valves substantially as described, in the spaces between the teeth in one or both gears to receive and hold the clay or substance ground, substantially as described.

I also claim, in combination with the grinding gears, the molding tube, when these parts are constructed and arranged for joint operation, substantially as described.

MACHINE FOR NOTCHING AND TRIMMING HOOPS—Sanford Littlefield, of West Troy, N. Y. , I do not claim notching the hoop by the cutter, D, moving its frame.

But I claim the relative arrangement of the cutters, D, and E, moving in ways rectiliniarly and obliquely, whereby the notch is cut and trimmed in one operation, as described and set forth.

CUTTING AND FINISHING THE LOCKS OF WOODEN HOOPS—Hiram Litteljohn, of Troy, N. Y. : I claim, first, the two separate knives, A B, when arranged together with a suitable bed, C, substantially as described, for use, in cutting the locks of wooden hoops.

I also claim the knife, D, when arranged in combination with the knives, A B, or their substitute, and the bed, C, substantially as described, for "barking" the lock while the hoop remains in the same place on the bed that it occupies during the cutting of the lock.

I also claim the knife, E, when arranged in combination with the knives, A B, or their substitute, and the bed, C, substantially as set forth for trimming the lock while the hoop is in the same place that it occupied during the cutting of the lock.

COATING ELECTROTYPE MOLDS—Henry Lovejoy and Robert Wheeler, of Brooklyn, N. Y. : We do not claim operating a brush by mechanical means to coat electrotype molds with coating material.

But we claim, first, Suspending the brush bar, I, by the crank, J, at one end, and attaching it to and operating it by the crank of the crank shaft, E, at the other end, in the manner and for the purpose set forth.

Second, The combination of the brush, H, and bed, C, with the blower S, and wind chest, V, in the manner and for the purpose described.

VALVE COCK—J. C. Macdonald, of Cincinnati, Ohio : I do not claim the guide, g, nor the valve, B, nor the screw on the stem, F, for the operating said valve, for these were secured to me by Letters Patent previously referred to.

But I claim the collar, g', on the valve stem, F, the guide cap, D, spring, i, head, G, connected with the stem, F, by the haudle. H, and screw cap, E, combined and arranged substantially as and for the purpose set forth.

[The object of this invention is to dispense with the use of packing around the stem of the valve, and still leave the cock perfectly steam and water tight. The invention is applicable to all valve cocks, but is more especially adapted to one which was patented by this inventor, Aug. 11, 1857.]

BEDSTEAD FASTENING—I. M. May, of Anderson, Ind. : I do not claim irrespective of construction and the special adaption shown and described, the employment or use of pins fitting in slots for the purpose of securing or connecting together the posts and rails of a bedstead, for various forms of such device have been used for the purpose.

But I claim the combination of the plates, D E, secured respectively to the post, A, and rails, B C, and provided with the oblique slots, f f, and pins, g g, substantially as and for the purpose set forth.

[This invention consists in constructing the fastening in such a way that when it is applied to a bedstead it not only connects the side rails to the posts but the end rails also, and dispenses with the use of mortises and tenons, thereby considerably diminishing the cost of construction of bedsteads, and adding to their strength and durability.]

TENONING MACHINE—John McCreary, of Delaware, Ohio : Having fully described the nature of my invention and being aware that many kinds of machines have been invented and used by others for forming round tenons, I therefore do not claim forming such tenons.

But I claim the construction and arrangement of the bit-holders, as set forth.

I also claim the manner of applying the set screw, as described.

HEMP BREAKS—H. D. McGeorge, of Morgantown, Va. : I claim breaking and cleaning hemp, flax, &c., by a combination of vibrating blades, d i. and stationary blades, e k, and clearing devices, f n, acting in concert with them, the whole being arranged and operating substantially in the manner set forth.

MEAT CUTTER—M. Newman, of Oak Hill, N. Y. : I claim, first, In combination with the cutters, the two branched rack or comb for holding the material against the cutter, substantially as set forth.

I also claim holding the rack or comb in its recess by the clamping of the two parts of the shell together, substantially as and for the purpose described.

I also claim the manner of holding and arranging the screw feeder, H, on the shaft, so that a portion of the section of the screw shall be on said shaft, as shown and represented, and for the purpose set forth.

TEMPLES FOR LOOMS—R. Pilson, of Laurel, Md. : I claim the construction of temples for looms, wherein is employed an adjustable extension compound connecting bar or rod composed of the spindle bars or sections, m 2 m 2 m n, and the splice lengths, o o o o, the detachable independent tubular sheaths, P P q r s, Fig. 3 ; the sliding yielding brackets or bearings, I I, J J, spring holders, b b, and springs, e e e ; the whole operated as shown, and whereby a double yielding action of the temples is brought about, and for the purposes substantially as set forth and described.

HARVESTERS—Isaac Reamer and Henry Miller, of Conrad's Store, Va. : I claim, first, Arranging the knife, E, on springs, F, and with its cutting edge slightly elevated above its rear edges, substantially as and for the purposes set forth.

Second, The employment of an auxiliary adjustable reel, N, in combination with the main reel, M, when the whole is constructed, arranged and operated as and for the purposes described.

CLASPS FOR COTTON BALE HOOPS—A. C. Richard, of Newtown, Conn. : I claim the use of the three rings, A, and C C, in combination with the hoop, B, as a cheap and convenient cotton bale hoop, substantially as described.

COOKING STOVES—Apollos Richmond, of Brooklyn, Conn. : I am aware that a stove was patented to J. Curtis, Jan. 27, 1843, in which the oven projects forward in a rectangular form, having the boiler holes arranged around it, but consider my improvement as differing from said stove, since my oven projects forward in a curved form, and since my fire chamber is also of a curved shape, while that of Curtis' stove is rectangular. I do not, however, lay any claim to either the form of oven or fire chamber separately, or to such construction as embraced in Curtis' stove.

But I claim extending the oven forward in a curved form and arranging around it the boiler holes as set forth in combination with the curved fire chamber, the whole being constructed and operated as described for the purposes set forth.

BED BOTTOM—F. Russell, of Otselic, N. Y. : I claim the combination and arrangement of the rods, 2 and 3, with the wires, 5, the bolts, 4, in the rails, 1, substantially as and for the purposes specified.

SPRING BALANCES IN COMBINATION WITH A KNIFE—George H. Smith, of Glenwood, Iowa : I do not claim the knife.

Nor do I claim in the abstract, or when separately considered, a spring balance.

But I claim as a new and useful article of manufacture, a knife having a spring balance inserted in its handle, as and for the purpose set forth.

[In the handle of a butcher's knife this inventor places a spring balance, so that the articles, whether meat or otherwise, can be cut and weighed with little trouble, and without the inconvenience of having continually to be moving to and from the scales.]

LANTERNS—Stillman C. Spaulding, of Rutland, Vt. : I am aware that patents have been already granted for attaching guards to lanterns without solder, and also for constructing the corner-pieces so as to hold the glass sides without solder, and I disclaim these as any part of my invention.

But I claim, first, Constructing a lantern by folding the edges of the several parts over wire frames, as described, so that it can be compressed and packed in a small space on removing the glass sides, and in the way set forth, and so that solder is not needed to secure the pieces composing the top and bottom.

Second, The use or a coiled wire in the manner mentioned, to retain the glass sides in their place.

Third, Attaching the lamp of a lantern to a hinged bottom, and connecting the latter to a spring in the top, so as to keep the lamp securely in its place, when in ordinary use, yet admit of ready access to it, as described.

CORN HUSKERS—N. T. Spear, of Boston, Mass. : I claim the combination and arrangement of the toothed

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beveled wheel, B, provided with one or more faces, with the smooth conical rollers. D D, one or more, and boards; E, when these several parts are united together and arranged for joint operation, substantially in the manner and for the purpose set forth.

[This invention consists in the use of a ro'ating beveled face wheel armed with teeth and used in connection with conical taper rollers, one or more, having journals fitted in yielding bearings, and arranged in such relation with the wheel that the ears of corn are allowed to descend by their own gravity down the "bite" or angle formed by the contact of the wheel and rollers, and the husks stripped from them in an expeditious and perfect manner.]

BREECH-LOADING FIREARM—E. T. Starr, of New York City: I do not wish to be understood as limiting myself to the special construction of the parts, as formal changes may be made, such as the substitution of equivalents having the same mode of operation.

I claim opening and closing the rear end of the barrel, to insert and inclose the charge by a plate turning on an axis below, and in the plane of the rear face of the barrel, substantially as specified, when this is connected and combined with a wedge, or its equivalent, operated by a lever below, substantially as specified, so that in the act of drawing out the wedge to liberate the breech plate, the rear end of the barrel shall be opened to receive a charge, and by the act of lifting or forcing up the wedge the charge shall be inclosed, and the breech-piece secured, while at the same time all the injurious effects of expansion and contraction and of fouling are avoided, as set forth.

COMBINATION STEAM VALVE—Robert Stewart, of Elmira, N. Y.: I claim the valve, e, with the heads, e'', as guides or bearings, fitting in chamber, g', in combination with the outer chambers, g, and steam head, B, against which valve, e, is pressed up, forming a steam joint op rating as a self-adjusting valve, operating as described, and for the purposes set forth.

MAKING PLIERS—Chester W. Sykes, of New York City: I claim connecting the jaws, C, of the pliers or pincers to the portions of the handles, A, above and below the center pin or fulcrum, B, upon which they move by pins, D D', at points diagonal with each other, and at equal distances therefrom, the lower set of the said pins, D', being inserted and allowed to traverse (with the opening and closing of the handles and jaws) in longitudinal slots, E, in the lower parts of the said jaws, C, substantially in the manner and for the purpose described.

[The jaws of these pliers are connected to the handles by pins, arranged diagonally with each other, and at equal distances from the center pin on which the handles move; one set of connecting pins move in parallel slots, so that the jaws are opened and closed parallel with each other, and take a more firm grip of the object grasped by them than if they opened and closed upon a fixed center pin, as heretofore.]

GATE—William Tobey, of Naples, N. Y.: I claim opening and closing the gate by the use of the parallel pivoted levers, D D, when arranged in the manner and for the purposes set forth.

BEDSTEAD—William S. Todd, of Mechanicsville, Iowa: I claim first, Attaching the ends of the side rails D D', of the bedstead, to the foot and head posts, B B', by the butt hinges, E E', arranged in reverse positions with each other, so as to enable the said side rails and the head and foot rails to be folded together almost parallel with each other, in the manner and for the purpose described.

Second, I also claim the combination of the right-angled brace or rod, I, groove, L, in which it traverses, and turning winged or cam shafts, M, for disengag ng the right-angled end of the said rod from the openings in the projections on the inner sides of the side rails, substantially as described.

[The head and foot posts are connected to the horizontal side rails by hinges, those on each side rail being arranged in reverse positions to each other, to enable the bed to be folded together to facilitate its removal from place to place. The sacking is formed of cords, which admits of this movement of the posts and rails, and when spread out, the side rails and head and foot posts are retained rigidly rectangular by pins properly applied.]

PRINTING PRESS—Ervin B. Tripp, of New York City: I do not claim producing a printed impression from type attached to and revolving with a type cylinder.

But I claim, first, The employment in connection with the type cylinder, D, of a cylinder, or rotary printing press, of a flattened plate or type bed, H, in which the type to produce the printed impression upon the paper are placed, which plate or type bed is revolved with that cylinder, and is so connected with and attached to it as to have the face of the type contained in it move over the impression roller, I, in the arc of a circle, as and for the purposes set forth.

Second, The feeding roll, L, operated by a positive motion, as specified, when combined with and elevated and depressed by the arms, M, and cams, N, in the manner and for the purpose described.

Third, The feeding guide, o, operated in connection with the feeding roll, L, as and for the purpose set forth.

PORTABLE FIELD FENCE—Archibald B. and Madison Vandemark, of Phelps, N. Y.: We claim the placing the locking batten, h, on the same side of the rails with the end batten, g, and its combination therewith, and with the locking batten, e, and end batten, f, and forming a lock, substantially as described, and for the purpose specified.

MODE OF FILLING WATER TANKS AT RAILWAY STATIONS—Charles Weed, of Milledgeville, Ill.: I claim the combination and arrangement of the yielding track, B, with the compound levers, C g, connecting bars, E, or their equivalents, weighted segment lever, F, ratchet pinion, h, and gear wheels as required, for giving motion to pump lever, L, substantially in the manner and for the purpose set forth.

SCREW CUTTER—Thomas Whitaker, of Cincinnati, Ohio: I am aware that the slot, h, the adjusting pin, I, the hook, I, and the lever, G, have been previously used in a similar connection for regulating and adjusting the cutters of a die head, and I therefore do not claim them as my invention.

But I claim the combination of the shaft, E, the sheaves, F F", the yokes, K K', and the guides, C C, with the dies, D D, when arranged substantially as described, for the purposes set forth.

APPARATUS FOR RAISING SUNKEN VESSELS—Aldridge Windham, of New York City: I claim the construction, arrangement and combination of the rigid and elastic inflatable air vessels, A and B, together constituting the raiser when so united, and so small as to be conveniently carried by any vessel which they can raise, essentially in the manner and for the purposes fully set forth.

I also claim the portable shoe, d, so constructed of wood and iron, or other material, as to be managable under water, so as to be easily applicable to the sunken vessel, to receive the cable for raising, and protect the vessel from abrasion or jamming by the cable, essentially in the manner and for the purposes fully set forth.

I also claim the inflatable elastic stopper, L, so constructed as to be easily thrust through a leak or opening in the vessel, and afterwards inflated with air, which stops the opening, so that the sunken vessel may be exhausted of water to assist its raising, essentially in the manner and for the purposes fully set forth.

GUARD FINGERS FOR HARVESTERS—John W. Brokaw, (assignor to Warder, Broker & Child), of Springfield, Ohio: I do not claim, broadly, making the cap of harvester guard fingers of wrought or malleable iron with a base of cast iron.

But I claim the peculiar construction of the cap, B, as described, when made of wrought or malleable iron, and connected to the cast iron base, A, and to the finger bar, in the manner and for the purposes set forth.

MODE OF LAUNCHING VESSELS—Gordon Conklin (assignor to W. T. Conkling,) of Conklingville, N. Y.: I am aware that balls have been used for raising vessels on ways, and they have also been used an anti-friction devices in various ways.

I do not claim, broadly, therefore, the employment or use of balls, separately considered.

But I claim the runners, c, balls, a, and ways, A, combined and arranged substantially as and for the purpose set forth.

[The object of this invention is to facilitate the starting of a vessel on its ways, and thereby obviate the delay and embarrassment usually attending the launching of vessels, especially those of large dimensions. The invention consists in the employment or use of runners provided with bales, and used in connection with ways, whereby the desired end is attained by very simple and effective means.]

PRESSURE AND VACUUM VALVE—William Hardy and John Parkinson (assignors to themselves and Aaron Bates), of Philadelphia, Pa.: We claim the valve chamber, A, spring valve, B, and inner valve, E, with their respective openings and passages, when constructed and arranged in respect to each other, as and for the purpose set forth.

CAR SEATS AND COUCHES—Alexander M. Holmes (assignor to himself and Albert G Purdy), of Eaton, N. Y.: I claim the combination and arrangement of the specific devices set forth, substantially as described for the purposes indicated.

SEWING MACHINES—George W. Hubbard, (assignor to himself, Walter Hubbard, W. L. Bradley, and N. L. Bradley), of Meriden, Conn.; I do not claim the operation of the looper by means of the needle, as this was patented by T. J. W. Robertson, May 22, 1855.

But I claim the looper composed of the fixed plate, c, the elastic plate, d d', and the hook, i, applie to be operated by and to operate in combination with the needle, substantially as specified.

[This invention consists in a looper of novel construction, operated by the eye-pointed needle, and operating in combination with it, to sew what is known as the "chain stitch" with a single thread.]

MACHINERY FOR DRAWING AND TWISTING WOOL—John W. Kennedy and John T. Plummer, of Plainfield, Conn., assignors to themselves and John Batchelder, of Lisbon, Conn.: We do not claim the attachment of the front drawing rollers in a rotating tube, through which the roving passes, so as to give the twist between the back and front drawing rollers, as we are aware that such application of the rollers has been made with a different and less simple contrivance than we have employed to produce the rotary motion of the so attached rollers.

But we claim first, The combination of the tubes, F and G, the toothed drawing rollers, and the convolute groove, h, the whole applied and operating substantially as described, to effect the draft and twist simultaneously, or either alone.

Second, Making the upper part of the frame which carries the back drawing rollers, and the rollers, or their equivalents, which carry the roving to be drawn and twisted, adjustable vertically, substantially as and for the purpose specified.

[A full description of this invention will be found on another page.]

STONE-HOLDING MACHINES—Eleazor B. Knight, (assignor to himself and Nathan Kellogg,) of Malden, N. Y.: I claim first, A box or holder, detachable from its guiding or supporting frame, and provided with sets, and means as recited for holding stones or other substances to be operated upon in being rubbed or ground, and which can be adjusted to plain or beveled edges, and for angular pieces, as described.

Second, I claim the angular guides or standards, as arranged for keeping the box or holder in its proper position in relation to the rubbing bed.

Third, I also claim the adjustable rests or supports, A, for keeping the box or holder at any point desired, as set forth.

RAKING AND BINDING APPARATUS FOR HARVESTERS—Allen Sherwood (assignor to E. P. Senter, Albert Goss, and Daniel Woodworth), of Auburn, N. Y.: I claim the traversing the double rake made to rock in its supports, to bring its fingers into and out of action, and automatically fastened and released, substantially in the manner described, and for the purposes set forth.

I also claim in combination with the fingers, t, for throwing the gathered gavel up into the concave, the arm, u, for carrying the binding wire up and over the sheaf, and placing the wire in the slot of the twisting wheel, substantially as described.

I also claim in combination with the twisting wheel the sliding knife for cutting off the wire, substantially as described.

I also claim, in combination with the cutter bar and its stud, the cam, 10, for the purpose of causing the cutter to act, regardless of the direction in which the shaft that carries the cam turns, substantially as described.

I also claim in combination with the wire carrier and guides, y y, a twisting wheel, made and operated substantially as described.

I also claim forming a knot or enlargement on the end of the wire, behind where it is cut off by the cutter, by twisting that portion of it by the means substantially as described, said twist preventing the end from being drawn through the slot of the twisting wheel, as set forth.

PIN-STICKING MACHINE—Cornelius W. Van Vliet, (assignor to the New England Pin Co.), of Winsted, Conn.: I distinctly disclaim the punches or drivers as such, as they have been well-known for halt a century.

I also distinctly disclaim the crimping bar as such, they having been patented in England to Miles Berry in the year 1839, and in the United States to J. J. Howe, of Derby, in Connecticut, in the year 1843.

I also distinctly disclaim the sliding separator as such, as that was patented to J. B. Terry, assignee of Thomas W. Harvey, January 3, 1854.

I also distinctly disclaim the channel ways as such, they having long been known and used for arranging screws, pins, &c.

I claim the combination of the series of channel ways with the sliding separator, when constructed and made to operate substantially as described.

Second, I claim the combination of the punches with the sliding separator, when constructed and arranged substantially as set forth.

Third, I claim the combination of the crimping bars, with the punches, sliding separator and channel ways, when constructed and arranged and made to produce the result, substantially as described.

HARROWS—Samuel White, of Penfield, Ohio, assignor to Harlow Herrick, of La Grange, Ohio: I claim the adjustable plates, C C, in combination with the revolving shafts, E E' E'', and in connection therewith the spur wheel, K, all operating in the manner and for the purpose specified.

RE-ISSUES.

CARTRIDGES—Gilbert Smith, of Buttermilk Falls, N. Y. Dated June 30, 1857: I claim making the cartridge case, or at least the cylindrical portion thereof, of some impermeable and elastic substance, such as india rubber or gutta percha, substantially as described, so that it may be expanded laterally by the force of the explosion of the charge, and will contract itself after the explosion by its own inherent property.

SEWING MACHINES—T. J. W. Robertson, of New York City Dated May 22, 1855: I claim first, So arranging and operating a looper, or its equivalent, that it shall derive its motion from the movement of the needle, as described.

I also claim moving the looper up to and away from the needle, substantially in the manner specified.

SEWING MACHINES—James Harrison, Jr., of New York City late of Milwaukie, Wis. Dated April 11th, 1854: I claim clamping the thread of the needle at the downward or advancing movement of the needle by the means that are operated intermittingly, substantially as and for the purposes set forth.

I also claim combining with the clamping means, as described, a set screw or its equivalent, for adjusting the clamping means, so that the tightening of the stitch may be regulated to the degree required.

I also claim the combination of the drag bar, T, attached to the shuttle, and containing the eye, j, through which the thread passes therefrom, the opening, K, for throwing the said bar into position to prevent the delivery of the thread from the shuttle, and the adjustable liberating piece, V, for preventing the delivery of the thread from the shuttle, and allowing the desired quantity to be given out.

I also claim the constructing the shuttle in two parts, viz., the shell and cap, of which the latter is inserted into and withdrawn from the former, as described.

DESIGNS.

CAST IRON BEDSTEAD—Philip Tabb, of New York City.

NURSERY BOTTLE—Francis Kern, of Sandwich, Mass.

NOTE.—More than ONE-THIRD of the whole number of patents issued last week were secured through the Scientific American Patent Agency. The offices of Messrs. Munn & Co. are situated at 128 Fulton street, New York, and corner of F and Seventh streets, opposite the Patent Office, Washington, D. C., where they will be happy to consult with inventors at all times. No charge for consultation. The principal office is located in New York, where all communications should be sent.

The Mad Stone.

"The Misses King, residing in this city, have in their possession one of these remarkable stones, one of which has effected a multitude of cures of hydrophobia. This mad stone resembles in form the kernel of an almond, is seven-eighths of an inch long, and a quarter of an inch thick; one of the principal sides is convex, and the other flat. Its color approaches jet black, with the appearance of a slight greenish tinge. In hardness, texture and luster it resembles cannel coal. It was brought about fifty years ago by the uncle of the estimable ladies in whose possession it now is, from Hindostan, a country where jugglers not unfrequently perform the feat of suffering themselves to be bitten by venomous reptiles, and immediately thereafter extract the *virus* by some infallible antidote in their possession."—*Richmond Inquirer.*

We are surprised that a journal of the respectable standing of the one from which we clip the above, should give credence to the old and long since exploded superstition in relation to the "mad stone." All the eastern countries are infested by a vagabond set of adventurers, who claim immunity from labor through the possession of some alleged charm or special supernatural visitation, and in consequence exact *bheek* from their credulous believers. The theory about this wonderful "mad stone" no doubt had its origin from some such source, and like the traditional superstition of there being luck in an old horseshoe, it is fervently believed in by numerous people, although at variance with common sense. There is nothing in the composition of this wonderful Indian stone mentioned of either a medicinal or curative character, and it will, therefore, no more effect a cure of hydrophobia than the twin hypothesis of tying an eel skin around the wrist will prevent the yellow jaundice.

Recent Patented Improvements.

The following inventions have been patented this week, as will be found by referring to our List of Claims;—

FILING OLD COTTON GIN SAWS.—This invention consists in a file which forms one thread of a screw, and so constructed that it files the saw, and at the completion of each revolution of its own axis, feeds the saw round the balance of one tooth; thus all necessity for a feed motion is entirely dispensed with. The file thus constructed is used in connection with two conical files, so that while the depth of the teeth is being cut, the sides of the same are being reduced to the proper shape. This is certainly a very ingenious, simple and perfect contrivance and is entirely different from the gin filer patented a few weeks ago by this inventor, A. H. Burdine, of Chulahoma, Miss.

STEAM HAMMER.—P. Danver, of New York, has patented a new steam hammer, the improvement of which consists in the employment in combination with that kind of steam hammer whose hammer block or ram forms part of a cylinder, working on a stationary piston, of an external stationary cylinder with a proper arrangement of valves on the top. By this means the steam does not merely serve to elevate the movable cylinder with the ram attached, but its force is also exerted on the top to bring down the ram upon the substance to be hammered, with greater power than its own gravity alone would give. This is effected by admitting the steam between the stationary cylinder and the movable one, the latter acting as a piston to the former.

GAS BURNER.—The daily increase in, and extension of gas as an illuminating material, renders it highly desirable that every possible means should be taken to economize the light which it is capable of giving, or, in other words, we should ever try to obtain the greatest amount of light from the smallest amount of gas. As a very important step in this direction, Lucien E. Hicks, of New York, has invented a new gas burner, the remarkable simplicity of which, contrasted with its extraordinary results, somewhat astonishes us. It is the common "fish-tail" burner, which, as every one knows, gives an excellent light, with a metal cap placed over it. The cap has a round hole in its top, a little larger than the two holes of the ordinary "fish-tail" and by lighting this, nearly one third more light is obtained than would be, were the cap removed and the "fish-tail itself lighted. Patents have also been secured in foreign countries.

MACHINE FOR CASTING BULLETS.—This improved machine is composed of one or more stationary and one or more swinging mold bars, arranged in pairs and containing the halves of a number of molds combined with a pouring sliding trough or plate, which constitutes at the same time a series of cutters and with proper mechanism for operating the swinging bar or bars and pouring plate or trough. The invention consists in a certain arrangement of the centers of motion of the swinging mold bars, whereby as they swing away from the stationary mold bars to open the molds, the bullets are caused to be detached from the stationary and movable halves of their respective molds. It also consists in the arrangement of the swinging mold bars to swing between center screws so applied as to provide for their adjustment longitudinally in relation to their corresponding bars. J. A. Knight, of St. Louis, Mo., is the inventor.

MACHINERY FOR SPINNING WOOL.—J. W. Kennedy and John T. Plummer, of Plainfield, Conn., have invented some improvements in machines of this class, which consist firstly, in a novel combination of tubes and drawing rollers, and means of operating the rollers, by which the process of drawing and twisting can be performed simultaneously, or either of said processes separately, and by which, when the two processes are combined, great convenience is afforded for varying the relative degrees of draft and twist to suit various lengths and qualities of fiber. It also consists in making the whole of that part of a drawing and twisting or spinning frame, which carries the back drawing rollers and the rollers or their equivalents, on which the roving to be drawn and twisted or spun, is contained, adjustable vertically, to enable the distance between the back and front drawing rollers on both sides of a double frame to be regulated according to the length of staple, and yet preserve the proper relation between the back drawing rollers and the roller which contains the roving. The inventors have taken out a patent in England, and assigned part of the invention to John Batchelder, of Lisbon, Conn.

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New Inventions.

Cure for Bronchitis.

One of our cleverest and most reliable friends, says the Holly Springs *Herald*, informs us that common mullen leaves, smoked in a new pipe—one in which tobacco had never been used—is a sure and certain cure for bronchitis. The remedy is simple and innocent, and within the reach of all. Recollect that this is not the remedy of a retired physician whose sands of life have nearly run out, but is given to us by one who has tried it himself and seen it tried with others, and has never known it to fail in effecting a permanent cure. The remedy is simple, and we can certainly discover no harm likely to arise from a trial.

A New Material for Molds.

M. Buhring has recently obtained a patent in England for manufacturing carbon, and it is proposed to introduce an important improvement in the casting of metals by substituting compressed carbon manufactnred by his process for the sand or clay usually employed, Corbon thus formed is comparatively pure, and can be molded into any shape and form required, and the advantage derived from its use is, that the same material may be used over and over again without injuring the smooth surface of the cast material. The same material has been successfully applied to the manufacture of crucibles are by many considered superior to any others. Another purpose to which the compressed carbon is applicable is the manufacture of battery plates, and it is anticipated that electric telegraph companies would effect a vast saving in the cost of their batteries by employing carbon in connection with iron instead of zinc and copper plates now used.

Fireproof Garments.

Some experiments have taken place at Paris to test a contrivance for protecting firemen from the action of the flames, and enabling them to resist a strong degree of heat. It consists of gloves made of amianthus—a kind of filamentous mineral—a helmet of the same material, fitting into another of wire gauze, and a shield of suitable dimensions, besides other garments of the same kind of materials. Three firemen, having put on the gloves, were enabled to carry iron bars, at a white heat for three minutes, without being obliged to let go their hold. Straw was afterwards set fire to in a large cast iron cauldron, and continually kept up, while a fireman wearing the double helmet, stood above the flames, which he warded off with the shield, although they were at times above his head, he was enabled to keep his post for a minute and a half, at the end of which time his pulse, which was 72 before the experiments, had risen to 152. Another fireman followed who, having covered his forehead with a piece of amianthus, was enabled to resist the flames for three minutes and forty seconds.

Improved Seed Planter.

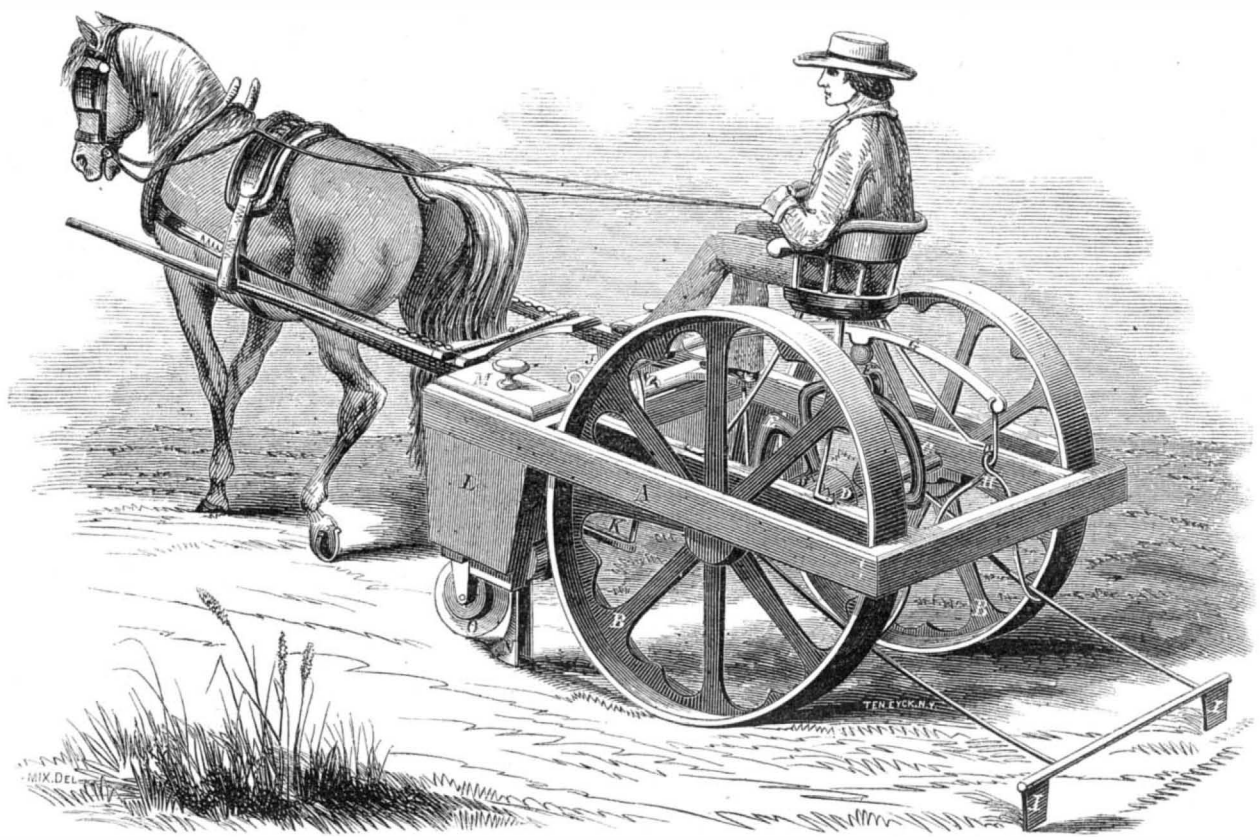
The seed planter has become in this country as peculiar an institution and as distinctive a characteristic of our agricultural nationality as any one of our personal characteristics; and so strongly is this felt among our inventors that they are always, with right good will, endeavoring to improve and extend the application of the machine.

Our illustration is a perspective view of a recent valuable improvement in this class of agricultural machines, invented by William Morehouse, of Davenport, Iowa, and patented by him June 22, 1858.

A is the frame, mounted on two wheels, B, on the axle, C, on which are cams, E, that can move freely around it. These cams are secured to a ratchet toothed cam, D, and a corresponding ratchet catch, D′, is secured to *c*, so that when the machine moves forward, the teeth of the catches will fasten into each other, and the cams, E, will be rotated, but when the machine is backed or turns at the end of rows, the cam, E, will not be moved. F is a friction roller that moves over the cams, E, and being rigidly attached to the bar, G, elevates or depresses it at regular intervals, determined by the shape and arrangement of the cams, E. To one end of G is attached by a link, H, the coverers, I, that are raised or lowered by the motion of G, thus covering the seed in parallel hills; the other end of G is connected to a bar, J, that runs parallel with the front of the machine, at each end of which it is supported in small standards, that serve as journals. K is a link attached to the axle of the distributing roller, *b*,—seen better in Fig. 2, which is a section of the planting device. L is the seed box, with its cover, M, planting share, N, and rotary colter, O.

The operation is as follows:—As the machine is drawn along, the motion of the bar

MOREHOUSE'S SEED PLANTER.



G, gives, by a series of link-work, an oscillating motion to the distributing roller, *b*, so that the seed cavity is alternately above the brush, *c*, that is secured to the block, *d*, and prevents the roller discharging too much seed into the planting share, N, and then is carried below it, to discharge the seed contained in the cavity. As it may be sometimes desirable that the driver should skip a certain distance, and as the regularity of the motion of wheels cannot always be depended upon, the inventor has added the foot lever, *a*, with two bars attached to its axle, so that the driver can, by the motion of his foot, either stop the operation of the links, K, or give them motion, independent of the wheels, thus making the planter automatic or not, as may be required.

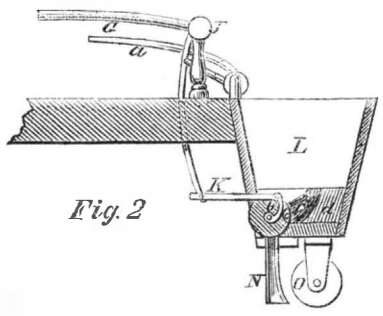
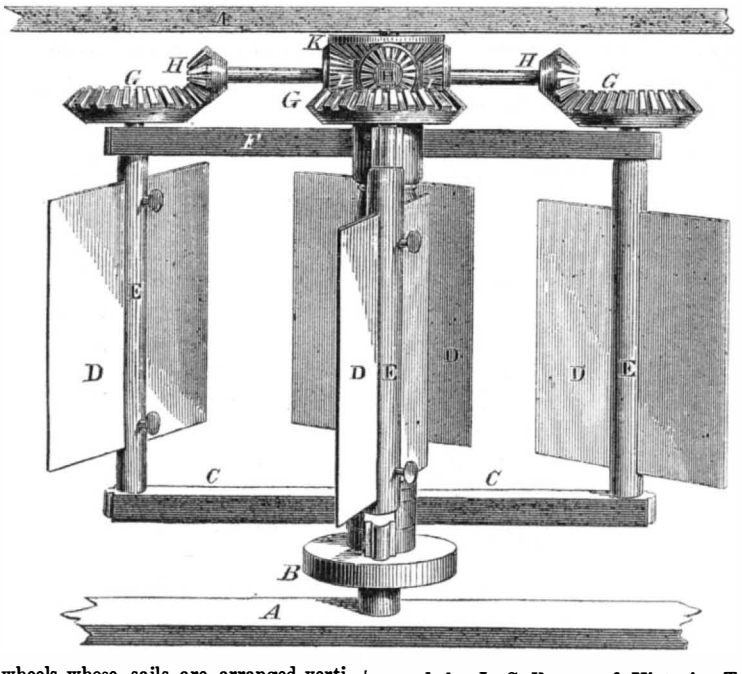


Fig. 2

It is very simple and compact, and any further information can be obtained by addressing the inventor as above.

CEMENT FOR BROKEN CHINA.—Take a very thick solution of gum arabic dissolved in water, and stir into it plaster of Paris until the mixture becomes a viscous paste. Apply it with a brush to the fractured edges, and stick them together. In three days the article cannot be broken in the same place. The whiteness of the cement renders it doubly valuable.

FAGAN'S WIND WHEEL.



No wheels whose sails are arranged vertically will operate without they have some arrangement by which they can be made to present a full face to the wind on the one side, and their edge to the wind on the other, so that the full force of the wind may be exerted in the one direction to rotate them, and the sail may offer very little resistance on the other. Such an arrangement has been invented by J. C. Fagan, of Victoria, Texas, and he has applied for a patent.

Our illustration is a perspective view of this wind wheel, and fully shows the invention, which is as simple as it is perfect, thoroughly obtaining the end desired.

A A is a framing, between the top and bottom pieces of which, a standard, B, is erected, capable of turning in the frame, from the bottom of this project four arms, C, at right angles to each other, and from the top corresponding arms, F, also project. These arms form a kind of framing between which the shafts, E, are placed in a vertical direction having the sails, D, attached to them, and secured by set screws, as seen in the engraving. On the top of each shaft, E, is a bevel wheel, G H, gearing into another, on the shaft of which is another bevel wheel, I, gearing into a stationary bevel wheel, K, connected with the frame, and into the center of which the axle, B, is stepped. From this description of the parts it will be seen that the rotation of the sails, D, on their shafts, E, is governed arbitrarily by the gearing, G H I K. The several wheels comprising this gearing are made of such size relatively with each other, that the wings or sails will make just half a revolution on their shafts to one revolution of the wheel, and each pair of sails is so placed that while on one side the full face of the sail is presented to the wind, on the other the side of the sail only meets the breeze, and offers little resistance to the wind as it passes through and against it. In this wind wheel the usual slamming and jar occasioned by the rudder adjustment of the sails by the wind is avoided, and as the direction of the force changes, the sails can be brought into a proper relative position by moving the wheel by means of a lever.

It is therefore in every way perfectly automatic and regular in its action, and any further information can be obtained by addressing as above.

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Scientific American.

NEW YORK, SEPTEMBER 25, 1858.

What Next?—Flying.

After the successful laying of the Atlantic Cable, some are beginning to inquire "Well, what new and wonderful invention shall we have next?" There are others again, who appear to have come to the conclusion that we have arrived at about the end of new inventions. They express themselves somewhat as follows:—"We have steamships bridging the seas, locomotives meeting the wants of rapid travel on land, and telegraphs completing all that has been lacking for communicating between distant places; therefore we do not see what more can really be done."

These fogy individuals seem to conclude that we have reached a millennium of perfection in invention. The truth is, however, that past inventions but pave the way for new discoveries—each new invention is but the ignition of another torch to illumine the path of progress. It is, no doubt, difficult to point out the field which presents the most inviting prospect for future investigation, but we have received a letter from a correspondent who asserts that the next thing which must be accomplished is *flying*. "Since the whales and porpoises have been astonished with the Ocean Cable," he declares, "we are now bound to astound the gulls and eagles." We certainly wish him success, and hope he will be enabled to accomplish his *elevated* object; but the history of the past does not promise much for the future success of human flying, even with the aid of wings, balloons, and all the helps of modern science.

Our correspondent proposes to build a large conical balloon, and propel it with wings, using steam power for this purpose. With such an aerial apparatus he intends to navigate the blue ethereal above, as safely as the frigate *Niagara* plows through the blue fluid below. The aerial ship devised by our correspondent, however, happens not to be new; a similar one was illustrated in our first volume. To others, as well as to himself, who may be indulging in such lofty visions, we must tell them that safe, practical and economical aerial navigation never can be rendered successful by any application of known powers. This subject has engaged the attention of inventors for hundreds of years, and although many successful balloon experiments have been made, yet ballooning is not *flying*. The art of flying consists in moving with perfect freedom and command in the atmosphere. Will human beings ever be able to do this? Some enthusiastic inventors—as many letters received by us testify—believe it will yet be accomplished. If some new power a hundred times more compact than the steam engine were discovered, it *might* be so applied as to render flying probable. The reason why birds fly is not because of their feathers, as some suppose, as each feather is heavier than an equal bulk of air, but because birds have a very concentrated power in their muscles, by which they are enabled to sustain themselves in the atmosphere, by opposing a counter force to that of gravity.

It would indeed be a most pleasant consideration, were we able to snap our fingers at railroad conductors and steamboat captains in going upon a distant journey, just by taking wings, mounting and soaring away in a *bee line* for the place of our destination; but until some new and grand discovery is made of the character alluded to, it is vain to speculate. When it is taken into consideration that it requires about 2,240 cubic feet of gas used for a balloon to raise and sustain a man weighing 140 pounds, it is easy to conceive that with known means (steam power or any other), mankind are yet far below the possibility of flying, but unless men try they never will fly.

Our Cotton Crop.

Cotton is the most important natural product in the world having a bearing on manufacturing operations, and the magnitude and influence of an American cotton crop commands the attention of all civilized nations; a deficient or abundant crop causing a rise or fall in its price, and affects the interests of millions of capitalists and artizans in every quarter of the globe. To our cotton fields they look with anxious attention, as upon their prosperity they are dependent for business, and the means of subsistence. From a table just prepared with great care at the office of the *Shipping and Commercial List*, this city, we learn that our total cotton crop for the year ending last month (August) amounts to 3,247,000 bales, an increase over that of the previous year by more than 100,000 bales; but it does not come up to the crop of 1856. During the past year prices have been very fluctuating, owing to financial difficulties and the embarrassments of manufacturers; but the wheels of manufacturing industry are moving rapidly again, and a very good business is doing at fair prices. Cotton is our great national staple for export, and upon it foreign manufacturers are absolutely dependent. Of the total crop of last year, 2,590,455 bales were exported, Great Britain taking no less than 1,809,966 bales. The rise and progress of American cotton as an article of culture, merchandize, and manufacture, is marvelous. Only a few hundred bales were raised for home domestic manufactures when the United States became an independent nation; now American "cotton is King," and rules in the marts and cabinets of nations.

The Architecture of our Cities.

It amounts nearly to a crime in the estimation of a true artist, when a bogus architect or masonic workman cuts one of the beauteous stones which are everywhere to be found, in inelegant or ungraceful forms—the marbles, with their clear positive colors, and veins of other mineral variegating their surface in such bold and independent lines—the porphyries, polished, classic and enduring—the granites, speckled with their red or black feldspar, white quartz, and shining mica—and yet there are so few artists among us, or we are so eminently practical that one can enter few American cities without having his notions of beauty, harmony and poetry offended by the shanty arrangement which everywhere meets his view. In Europe, the architect is a man of genius, an artist, one who studies the forms of the antique, and tries to reproduce them in the beautifully useful, such as a railroad station, as the Great Western, in London, where iron and stone have been blended with harmonious result, or others where brick and stone have attained a like end. But unfortunately for these fine structures, they have so little room and they are so crowded up, that it is impossible to see them. The grandeur of a city should consist in the regularity of its design, giving it a solid and business-like appearance. This is totally disregarded by our builders, for walking down a street in New York, we observe first a really handsome cast-iron building full of grace and elegance and painted a light reddish-brown, the style is warm and pleasant and could be made an ornament to the city but for one single fact. The adjoining buildings erected nearly at the same time are, although individually noble, collectively a mess, for one is cold and classic marble, without decoration, and the other a glaring red sandstone with heavy lintels, cornices, curbs and parapets, and so these three handsome buildings are made to spoil a street because there is a want of uniformity in their architectural proportions. It is little matter what be the material of which the stores or houses are built, or what be the style of architecture, so long as the material and style are consistently carried out, and if they are, the result must always be harmony and beauty. In our own Broadway we have more elegant buildings than in any other one street in the world, but as they are mixed up like tickets in a ballot box, Grecian, Doric, Norman, Saxon, Italian and Shanty, marble, granite, sandstone, limestone, iron and clapboards, no effect is produced, and all the beauty is lost, through the incongruity of their arrangement.

Would it not be as well for the authorities of our cities to have not only plans of our streets which are to be followed, but also suggestions to land owners for a prevailing material and architecture; such a measure could not be otherwise than beneficial and every one who had the interests of his city at heart, could not fail to coincide in such a design which would promote its beauty and attractiveness to the stranger.

The Novskoi Perspective in St. Petersburg, is perhaps the most elegant street in the world, from the simple fact that it is wide, and the lines of the buildings fall in with the vision, making it, as its name implies, a perfect lesson in perspective to the humblest *droschky* driver who drives along its pavement We would have streets like this in America, for a handsome street is a great civilizer and humanizer, and realizes Keat's sentiment that

"A thing of beauty is a joy for ever".

Origin of the Altantic Telegraph.

We have received from Professor Jackman, of the Norwich University of Vermont, a copy of the *Vermont Chronicle*, containing a communication of his, originally published in the *Vermont Mercury*, in August 1846, in which a Transatlantic Telegraph between England and America is recommended. The plan, as detailed in this communication, although more definite than others claimed to have been suggested anterior to this date, is yet impracticable in character, and does not in any manner take from Gen. Hubbell the credit of first pointing out the existence of the plateau or table land between Newfoundland and Ireland, in connection with the cable now laid upon it, and in fact suggesting the only mode, means and location, as we asserted, of carrying the cable across the Atlantic Ocean. Before penning our article, we were aware of the fact that many persons had made statements on this subject as early as 1843, but as they were of an indefinite character, and simply conveyed a belief that a telegraph would in time unite the shores of Europe and America, we did not think it worth while to mention their authors, any more than we would if aerial navigation were consummated, mention the name of the thousand and one persons who are daily making predictions of its ultimate success.

The plan of Professor Jackman, was in substance to cover the wires with india rubber and encase them in lead tubes, as had been previously done across the East River, and pay them out from two vessels starting from a suitable point mid-ocean between Liverpool and Boston. The only practical, and original feature about this plan is, that of commencing to pay out the cable at a point mid-ocean between the places where the termini were to be landed. For this Professor Jackman is deserving all due praise, as we think that this system of laying a long submarine cable is preferable to the one adopted by the Atlantic Cable Superintendents, upon their first unsuccessful trial in 1857. Our theory however is, that without covering the wire with gutta percha as suggested by Mr. W. Reynolds, of this city, and laying it on the plateau or table land as originally pointed out by Gen. Hubbell, of Philadelphia, a transatlantic telegraph cable could never have been successfully laid and insulated, and made to answer the purpose of its design.

Scientific Lectures.

The winter evening lecture before our lyceums and literary associations has within the last few years, in all our larger towns and cities, become an established institution, and no more pleasant or profitable plan for diversifying the pursuits and occupations of our long indoor season could be well devised. To one feature of our present lecture system we have a serious objection. They are too exclusively literary, and have too much for their object amusement and entertainment rather than instruction. Science, especially, fails to receive that attention which its importance and relations to every-day life demands. The reason for this in part is doubtless that there are but comparatively few good scientific lecturers in the field, and these are not always readily engaged. No town is, however, absolutely destitute of resources of this sort, inasmuch as every workshop and manufory is capable of furnishing intelligent mechanics, thorough masters of their profession, who with a little encouragement, could profitably discourse for an hour to any audience, however select, and wherever assembled. In default of these, we would recommend the following gentlemen, all of whom are capable of handling a scientific subject ably and popularly, and of affording their hearers abundant materials for thought and reflection—Professor N. B. Rogers, Boston; Dr. J. V. C. Smith, do.; Professor B. Silliman, Jr., New Haven; David A. Wells, Troy, N. Y.; E. L. Youmans, Saratoga, and P. Boileau Jones, Brooklyn, N. Y. No course of lectures ought to be made up without devoting at least three evenings to the discussion of scientific subjects by some of the above-named gentlemen. All of them may not possibly be open to engagements. Some of them we know are. Mr. Youmans is always in the field. Dr. Jones will lecture in the vicinity of New York. Mr. Wells has heretofore declined invitations, but we believe can be secured for the coming winter, and no one is better capable of rendering a matter of science both intelligible and interesting. But a lecture from any of the above-named gentleman will be worth a dozen of mere literary disquisitions, or a *resumé* of historical subjects, with which all are more or less familiar.

The Atlantic Cable and the Evening Post.

In the last number of the Scientific American we criticized, in respectful language, some observations made in the *Post* upon the Atlantic Cable. It has suited the convenience of the editor to indulge in an unmannerly reflection upon us because we had the temerity to call in question a mere hypothesis set up in his journal as the probable difficulty in operating the cable. This hypothesis we regarded as no useful information, and treated it as such, without intending to ruffle the temper of the editor; and we are confident that any electrician of repute will endorse our position.

The editor of the *Post* charges that we have "flippantly" spoken of "articles." Now we beg to assure him that we have done no such thing; we simply spoke of a single article from which our extract was taken, as the basis of our remarks; and we further beg to assure him that the article he speaks of as likely to benefit us, is, in our humble judgment, of no *practical* value; and we have no idea of casting aside an acquaintance of fifteen years with this subject to enter into a school of visions and theories.

Death of George Combe.

The English journals announce the death of Mr. George Combe, the celebrated champion of philosophical phrenology. He was born in Edinburgh in 1788, and was educated for the profession of the law. At an early period the opinions of Gall and Spurzheim attracted his notice, and he studied them with great industry. In 1819 he published his essays on phrenology, and in 1828 he published his work entitled "The Constitution of Man considered in relation to External Objects," which led to a fierce controversy, Mr. Combe's views being obnoxious to the orthodox party. In 1838 he visited the United States, where he remained lecturing and preparing his journal until 1840. His works had an extensive circulation in the United States, as well as in the British islands, and translations of them have been made into French, German and Swedish. The later years of his life have been marked by very infirm health.

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How Steel Files are Made.

These useful tools are essential to the operations of almost every branch of mechanism. They are necessary agents in the fabrication of the most delicate watchwork, mathematical instruments, steam engines, printing presses, houses, and ships. As a consequence vast quantities of them are required in every department of industry, and to supply the demand they are manufactured extensively in various parts of our country, and a very large number are annually imported.

Files are made of the best English cast steel. The rods for the blanks are obtained of such sizes as are suited to the character of the files to be furnished. The first operation is that of forging the blanks from the rods. This is done by blacksmiths who must be very skillful, quick, and exact workmen, as the metal must not be heated above blood-red temperature. All the blanks for each size of file must be exact in length and swedged to the proper shape, after which the tangs are forged. The next operation is that of annealing them, to render them soft and ductile. This is done by putting them into an annealing oven, or placing them in a box protected from the air by being buried in sand, then heating them to a red heat, and cooling slowly. After this they are ground to a smooth face, and are ready for cutting. The burring or cutting of the fine grooves on the face of files is the most tedious operation connected with their manufacture. This is performed by workmen who require long practice and great skill of hand and eye to render them experts. They sit at work astride of wooden horses, with their feet in leather stirrups (endless straps), the top of each passing over a file, and holding it firmly down on the anvil. The blank is held upon a sole of pewter resting on an iron block, and each operator cuts the burs with a short broad chisel held in the left hand, and a heavy hammer in his right. This hammer is something of a curiosity; it resembles a crooked necked squash, with a cross slice cut off each end, but for all this it is a scientific *rapper*, notwithstanding its uncouth appearance. Being very heavy to be swung for long periods of time with one hand, were it not crooked downwards the strain of the blows would principally come upon the wrist, whereas it is distributed more equally over the whole arm of the operator, who commences to cut at the point of the blank, and with great dexterity shifts the chisel at every blow, and raps away until he has cut a whole series of angular grooves nearly up to the tang. When one series of grooves are cut, the operative slacks his stirrups, and releases the file. The edge and crossbars of files are cut in the same manner, and the face of the metal is lubricated before each row is commenced. The ridge thrown up by each cut determines the position of the next, and the operator quickly determines the spot to strike by the touch of his finger, which holds the chisel, and is trailed along the surface of the file. The largest sizes of files are cut by men, the smallest by women and girls. The angular grooves of double cut files have their faces in the form of numerous rows of fine hard angular teeth. It frequently happens that the face of blank files are not uniform in their texture as regards hardness. On this account some of the grooves require an additional rap to form the burr. This is a peculiarity which has been very difficult to overcome by any of the machines which have been employed to make these simple tools.

After the files are cut, they are ready for tempering, and are prepared for this process by a thin coating of a composition of salt brine, flour, and charcoal dust, and sometimes pounded cow's hoof. This is to protect the teeth from being burned, and from oxydizing when heated. The files are heated in a bath of molten lead, which is always of a uniform temperature. The temperer takes each prepared file singly, dips it into the molten lead, holds it for a few seconds until it is of a red heat, then lifts it out, gives it a rap with a lead hammer on a pewter anvil to knock off the burned scale, and straighten it, if curved, then plunges it into a bath of cold salt brine, and it is tempered. This process must be performed with great tact to avoid the curving of the files by the heat, and consequent cracking when suddenly cooled. After this, the tangs are softened by dipping them in the molten lead and allowing them to cool slowly, in order to remove their brittleness. The files are next scoured with fine sand and water by brushes, then put into lime water, and afterwards thoroughly washed. They are next dried, rubbed over with some oil and turpentine, and are considered finished. Before being packed for market, each file is thoroughly tested by the foreman as to its quality of temper and the burr on its face.

Although all the processes of the file manufacture are but repetitions of the same operations which are performed every day by the operatives, yet these require long practice and tact to execute accurately. It has been suggested that instead of one, a number of files might be taken up at once by the temperer and submitted to the hardening process in order to facilitate the operations. It has also been suggested that chisels having a number, instead of one edge, might be used by the cutters, and several burrs cut with one blow of the hammer instead of a single one as is now the case. Such suggestions have already been acted upon experimentally without any practical benefit.

Various machines for cutting files have been constructed and put into operation. It is now more than twenty years since machine-cut files were brought to our notice, and at the present moment there are several machines in some of our file factories; the work which they have executed looks well, the burrs being beautifully regular, yet such files are not equal in quality to those made by hand labor, hence the latter have the preference and bring the best prices. The hand-made files have a sharpness of burr which machines have generally failed to imitate, and yet to us this appears inexplicable, as it seems reasonable that machinery might be constructed to cut files as well, in every respect, as can be done by hand.

Quite an extensive business is carried on in the re-cutting of worn out files, and in the vicinity of New York there are great numbers of small shops, where such operations are carried on. The old files are first softened by taking out their temper, then they are ground to a smooth face, re-cut, tempered, and finished.

File-cutting was introduced into our country from England, and is now mostly conducted by manufacturers and mechanics who are natives of that country. They have brought to our shores all the skill and industry for which they are so justly distinguished, and they produce files equal in every respect those made in Europe, and yet England still supplies us with the vast majority of our files. Our steel comes from England, while the Sheffield filemakers now manufacture their own steel, and are thus enabled to meet rivals in every market in the world. Until we make our own steel (and we do not see why we should not do it), our toolmakers must labor at a great disadvantage in competing with those tools which come from abroad.

A blunt or worn file may be partially sharpened to do a considerable amount of work by steeping it for a short period of time in a warm solution of sulphuric acid and water, then washing it well in hot water. One quart of sulphuric acid to six of water are mixed together to form the solution. Sulphuric acid should never be poured into hot water, as it is liable to produce an explosion similar to red-hot iron coming in contact with water. The acid should be mixed first with two parts of cold water then boiling hot water put in to make it up to the degree of dilution necessary. The acid bites away a portion of the steel from the sides of the grooves or burrs, thus leaving their edges much sharper. Some use a little soda in the hot water employed for washing these acid-cut files; it neutralizes any free acid that may be left adhering to them.

The Atlantic Telegraph Cable.—John Bull in a fit of Mulligrubs.

According to the London *Times*, sober, quiet, beer and beef-fed John Bull does not intend to get up a jollification in view of the successful laying of the cable; in fact, he intends to be very cool indeed, and will exhibit a degree of stoicism in proportion to the enthusiasm of the Americans. The observations of the *Times* will be found very pungent and amusing. The *Agamemnon* is represented as "returning to Portsmouth, when its officers and crew were paid off, without any one testifying interest in their proceedings. No one gave it a second thought, or cared whether they go or stay, or even who they were." Such indifference is, indeed, sublime; but how stands the case with the "Americans," as the English always call us? The *Times* thus sums up our exhibition:—

"The news was received with all that enthusiasm of large 'posters,' speeches, and bunkum addresses; no town or community too small to present its address of congratulation. New York, and every other city to the furthest West, went off into ecstasies. It was a dozen anniversaries of Independence rolled into one. There were as many salutes as at Cherbourg; three hundred and thirty-three guns from the batteries; a hundred guns here, a hundred there; a hundred monster rock blasts in the Central Park, and some heavy salutes from the top of the Astor Hotel. All the church bells were rung. Every house was illuminated in that extempore fashion which tells better than our own brilliant uniformity. All the world was out in the streets. There were the banners of every nation and of no nation, and transparencies with sentiments, verses, puns, allegories and devices, in which, if England had not quite its due meed of honor, it was not, at least, forgotten. The *Agamemnon* was the greatest of kings; Cyrus, the new, made a grander union than that of Media and Persia; the cable had opened a new Field of usefulness; the *Niagara* and the Hudson had beaten the Atlantic, and the union of the two worlds—it reads almost like a profaneness—was actually ranked with the Declaration of American Independence. The cable itself is declared to be the wedding ring of the two cousins—the strongest bond of amity—the deed of eternal partnership. But it is in vain to think of beating our neighbors—now hardly transatlantic—at this sort of description. They have a special gift at 'heading.' Every heading in the New York *Herald* tells like a sixty-eight pounder; but we have not space for the whole battery—only for a shot or two:—'The Metropolis all in a Blaze'—'Union of the Whole World'—'Quarter of a Million of People in the Streets'—'Scenes, Sights, and Sensations'—'Message of Mayor Tiemann to the Lord Mayor of London'—'More Salutes to-day'—'Was ever anything like this display?'—'International Official Courtesies'—'Tremendous Sensation'—Some of our people going off Half Cocked'—'But the Telegraph a sure thing'—'Everybody crazy with joy'—'Now is the time for a Universal Jubilee'—'Excelsior,' &c. To wind up the day there were volcanoes of fireworks, chiefly, as it appears to us, from the tops of the large buildings, concluding with the conflagration and destruction of the City Hall, from the roof of which the principal volcano had been discharged.

All this time we did not ring a bell, or let off a squib, or light a kitchen dip, or even walk out into the streets, or do anything whatever in honor of the event. In all England we believe that not one man congratulated his neighbor about it. We were all pleased in our own quiet fashion, and somewhat surprised at so complete a success coming so quickly on the heels of repeated failures."

One might reasonably suppose that after the indulgence of this bit of fun at the expense of the "Americans" they would be let off; but not so. The *Times* returns in a most trenchant manner, and coolly appropriates all the credit of the enterprise to British skill and capital. Hear this great organ:—

"Under such circumstances it may be well to state at once that the idea of the submarine telegraph between England and America was started here and worked out here, formed into a practical plan, and into a company. By this company the money was raised almost entirely in England; in fact, all the shares held in America from first to last are scarcely more than half the number taken up in Liverpool in one week alone. The cable has been made in England, English engineers devised and constructed the paying-out machines at the works of Eaton & Amos, English electricians planned and ascertained by practical experience the best means of working through the wire. All the ships of the expedition, except the *Niagara* and *Susquehanna* last year, and the *Niagara* this year, were provided by the English government, and both on board the *Agamemnon* and *Niagara* English electricians and English engineers were alone employed to submerge the cable—in fact, to accomplish the undertaking. Yet it is actually upon such facts as these that the States go into ecstacies, and get up demonstrations upon their own courage, perseverance, and enterprise in the accomplishment of this scheme, upon their firm belief in its ultimate success, and upon the wealth (some £80,000 or £90,000) they had embarked in it. A banquet is to be given at New York to the captain and officers of the *Niagara*, 'to commemorate the successful laying of the cable.' Not a word of the English electricians and engineers on board that vessel, the men who were sent to lay, and who did lay, the cable. It is generally the fate of those who grasp at inordinate quantities to have even the small share which would otherwise be given to them withheld. This rule is likely to apply in the case of the officers of the *Niagara*; and if they put in a claim to be considered foremost among the agents in this great scheme, they must expect to hear of things which, in the general satisfaction on this side of the water, would otherwise have been forgiven, if not forgotten. They will be told how the rough, and, to say the very least of it, the careless manner in which they threw out the rope from the *Niagara* at Keyham, after the first failure, was nearly destroying that half, and it, in fact, did destroy very many miles of it. They will be told, also, how, even in the last trips, even the character of 'guest' did not suffice to protect the English gentlemen and workmen on board their ship from such annoyance and insult that it was feared that when the vessel joined at the rendezvous the English on board the *Niagara* would refuse to proceed any further in her, and so put a stop for a time to the whole scheme. In fact, it was only through the influence of Mr. Canning on board the *Agamemnon* that such a strike, if we may so call it, among the men was prevented before the vessels left Plymouth. Captain Hudson and his officers will also be reminded how, when the ships returned to Queenstown after the great storm, they were almost to a man against further attempts, and if their opposition had had the least weight with those entrusted with carrying out the undertaking the second voyage would never have been made, and the completion of the Atlantic telegraph deferred at least for many, many years, This is not the first time that American ships have gained great name of a certain kind under false colors, and the officers of the *Niagara* are building up a reputation on the Atlantic cable, with which, however, they have no more real connection than they had, it is said, with the great public ball at Plymouth given in their name, and on which, likewise, they contrived to found a brief reputation for hospitality and profusion.

Jonah's Whale and the Leviathan.

We clip from an exchange a curious example of literalism in interpretation, which we commend to our literalist readers as a critical curiosity:—

"A correspondent writes to us on a subject of prophecy as follows: I believe the Leviathan, which Job so clearly and beautifully describes, is not a *whale*, or any other living monster of the deep. A steam engine on the railroad in itself has no life, yet it moves at the rate of twenty miles per hour with ease; so, for aught we know, the *Leviathan*, or English steamship, may move with the same velocity, and if so, will it not *literally fulfill* the ancient prophecy recorded in the forty-first chapter of Job? Begin with the nineteenth verse, and suppose he is describing a huge steamboat instead of a whale. "Out of his mouth go burning lamps, and sparks of fire leap out. Out of his nostrils goeth smoke, as out of a seething pot or cauldron. His breast kindleth coals, and a flame goeth out of his mouth. He maketh the deep to boil like a pot. He maketh the sea like a pot of ointment. He maketh a path to shine after him. One would think the deep to be white or hoary." Now, I would ask any one who has looked from the stern of a steamboat when sailing, if Job has not described the wake of the boat to the very life?"

The only objection to this is, that the *Leviathan* has been re-christened the *Great Eastern*.—Eds.

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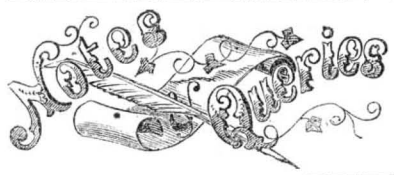

*** PERSONS who write to us, expecting replies through this column, and those who may desire to make contributions to it of brief interesting facts, must always observe the strict rule, viz., to furnish their names, otherwise we cannot place confidence in their communications.

STEAM CULTURE.—It is very difficult to state at what period the application of steam was first made to purposes of agriculture. In 1618, David Ramsey and Thomas Wildgoose took out a patent in England, the first on record in this class. The object of the invention, as stated, "was for the good of the commonwealth, as well as to plough ground without horses or oxen;" and in a later day (1769), Francis Moon secured a patent for a "new invented machine, to go without horses, adapted to wheel carriages in general, also to ploughing, harrowing and every other branch of husbandry." So confident of success was the inventor that he actually sold all his own horses, and advised his friends to do likewise, under the impression that their value would be speedily reduced to one-fourth.

W. J. S., of N. Y.—The conductor of super-atmospheric electricity for land telegraphs which you describe, is also described on pages 190 and 191 of Trumbull's work on Telegraphs, second edition. It has not sufficient novelty to warrant its publication.

BROOMS—John H. Lenty, of Etowah, Ga., wishes to purchase a machine for making brooms from broom corn, also a lathe for turning out the handles.

G. & T., of N. Y.—We do not know where coil springs can be obtained.

L. G. G., of N. C.—Smee's Electro-Metallurgy is the best one known to us. It can be got from Wiley & Halstead, New York.

J. K., of Ind.—We use Webster's Dictionary altogether. It is the standard in this country.

PORTABLE CIDER MILLS—We are having frequent inquiries for such mills, and we think that some one who makes them will do well to advertise them in our columns.

W. M., of Ohio—Some turbine wheels have realized 80 per cent of the water power. Address Mr. Boyden, Lowell, Mass., regarding the price he charges.

J. C. T., of N. Y.—Rotary tables are common, but we have never seen one formed of a series of rising concentric circles, as represented in your sketch. If you can show that it is useful, a patent may be secured for it.

J. D. W., of Mo.—You ask "How long it will take an electric current to pass through the entire length of the Atlantic Cable?" It will pass almost instantaneously, but as a primary current generates a counter current, it will take from four to six seconds to send one current after another continuously.

J. H., of Mo.—The inhalation of oxygen has been employed for lung diseases, but never for fevers so far as we know. You seem to suppose that the inhalation of pure oxygen would be better for the health than breating atmospheric air. This would not be so. By inhaling pure oxygen, the pulse and the blood increase in motion, and life becomes a feverish excitement.

B. J. M., of Pa.—The fluid to which you refer as being used by tinners to ensure the adhesion of solder is the chloride of zinc in solution, which they apply with a feather to the metal.

H. A S., of N. Y.—Your directions for the use of the Davy lamp are well known and form part of the British Coal Inspectors instructions to miners.

H, B. H., of Pa.—We believe that Carroll Spence is the present American Minister at Constantinople.

C. D., of Pa., and M. J. O., of Mass.—Messrs. Blackie & Son, 117 Fulton street, New York, have published a good work on mechanical drawing. It will undoubtedly aid you in getting a knowledge of this art.

L. & B., of Mass.—The person who first brings an invention to perfection—applies it usefully—is entitled to the patent, and will maintain his right in a court of law. The person who may have talked to others about inventing a similar machine years before, but who never did anything towards completing it, until the patent was secured by another, cannot come in and dispossess the patentee of his right.

P. C. G., of Mass.—The most common cause of the explosions of steam boilers is the want of water in the boiler, whereby the flues become red hot and the metal rendered weak—easily blown to pieces by the pressure of steam generated.

E. J. R., of Va.—The sample of stone sent to us is rock quartz, and has no value whatever.

W. & J., of Ill.—We do not know of any means whereby alcohol impregnated with turpentine can be deprived of its effects.

J. N., of Texas.—We thank you for the information you send us. We are well acquainted with Davenport & Cook's experiments with electro-magnetic engines in 1836. We know nothing of their present whereabouts.

TOBACCO CUTTER—J. W. Woodburn, of Rome, Pa., wishes to correspond with some one who can supply him with a good tobacco cutter.

T. McE. H., of Wis.—Piesse's Art of Perfumery is published by Lindsay & Blakiston, Philadelphia. Carnelians are very cheap, and are shaped by being ground with emery powder on steel plates which revolve very rapidly.

W. E. S., of Ill.—We thank you for your club of subscribers. If you give a power of attorney to a party to sell your patent, it should be put upon the Records of the Patent Office.

S. D. C., of Va.—The percentage of power given out by a water wheel in proportion to the power of the water is ascertained by a friction brake applied to the shaft. You should bear in mind that power means velocity multiplied into weight, not velocity itself.

Money received at the Scientific American Office on account of Patent Office business, for the week ending Saturday, September 18, 1858:—

A. H. G., of N. Y., $30; S. K. B., of Ill., $30; W. M. W., of N. Y., $30; W. R. C., of Iowa, $25; W. Y. G., of Ky., $30; M. L., of Vt., $25; W. H., of Pa., $25; H. C. S., of Ohio, $250; W. H., of Ill., $25; G. H. M., of N. Y., $25; M. & B., of N. Y., $25; J. T. D., of N. Y., $55; P. W. G., of Ill., $20; J. W. Van D., of Mo., $55; E. P. C., of Mass., $25; H. & K., of Ill., $30; E. M., of N. Y., $30; P. C. F., of N. Y., $10; W. T. B., of Ohio, $25; R. H. M., of N. Y., $30; G. W. S., of Ill., $25; A. C. B., of Mo., $25; J. D. R., of Pa., $25; W. H. B., of N. Y., $25; C. C., of Conn., $52; A. S., of Ill., $25; H. S., of N. Y., $30; E. A. G., of Pa., $25; J. A. D., of Ky., $20; E. M. & J. E. M., of N. Y., $30; H M. C., of Mich., $25; G. L. D., of Vt., $40; J. W., of R. I., $35; C. E. B., of N. Y., $30; W. W., of N. Y., $30; J. M., of N. Y., $50.

Specifications and drawings belonging to parties with the following initials have been forwarded to the Patent Office during the week ending Saturday, September 18, 1858:—

A. S., of Ill.; J. A. D, of N. Y.; W. T. B., of Ohio; J. D. R., of Pa.; J. M., of N. Y., (2 cases); H. M. C., of Mich.; A. W., of Ga.; A. C. B., of Mo.: W. B. B., of Conn.; C. C., of Conn.; E. A. G., of Pa.; M. L., of Vt.; W. H., of Ill.; W. R. C., of Iowa; W. H., of Pa.; G. W. S., of Ill.; H. G., of Ill.; H. C. S., of Ohio; M. & B., of N. Y.; W. H. B., of N. Y.; W. B. C., of Pa.; E. P. C., of Mass.; J. F. D., of N. Y.

Literary Notices.

THE STORY OF THE TELEGRAPH, AND A HISTORY OF THE GREAT ATLANTIC CABLE. By Chas. F. Briggs and Augustus Maverick. New York: Rudd & Carleton, 310 Broadway. The small portion of this work which is devoted to general information concerning electric and magnetic telegraphs is very meager and incomplete, while that relating to the history of the Atlantic Telegraph is full and comprehensive. All the interesting and valuable information which the newspapers have given forth since the first projection of the enterprise is in this work condensed and properly arranged, so that it forms a convenient and concise handbook of this great triumph of science over the difficulties of nature. The work is embellished by some engravings and a portrait of Cyrus W. Field.

THE EDINBURGH REVIEW. Published by L. Scott & Co., No. 54 Gold street, New York. This is the nestor of Reviews, but though the oldest it is as vigorous as the youngest in our language. The number for the present quarter contains an able leader on the mason-geologist, Hugh Miller; also, a keen criticism on Thiers' History of the French Consulate and Empire, and a very able essay on the "Progress of Physical Science."

BLACKWOOD'S MAGAZINE.—This monthly, also published by L. Scott & Co., always contains able contributions. "What shall we do with it?" by Bulwer, is continued to part 16. There is a robust and spicy article on "London Exhibitions and London Critics," and several other interesting articles.

VALUABLE HINTS TO OUR READERS.

RECEIPTS—When money is paid at the office for subscriptions, a receipt for it will always be given; but when subscribers remit their money by mail, they may consider the arrival of the first paper a *bona fide* acknowledgment of the receipt of their funds. The Post Office law does not allow publishers to enclose receipts in the paper.

PATENT CLAIMS—Persons desiring the claim of any invention which has been patented within fifteen years, can obtain a copy by addressing a letter to this office, stating the name of the patentee, and date of patent when known, and enclosing $1 as fee for copying.

BINDING—We would suggest to those who desire to have their volumes bound, that they had better send their numbers to this office, and have them executed in a uniform style with their previous volumes. Price of binding 75 cents.

AMERICAN AND FOREIGN PATENT SOLICITORS.—Messrs. MUNN & CO., Proprietors of the SCIENTIFIC AMERICAN, continue to procure patents for inventors in the United States and all foreign countries on the most liberal terms. Our experience is of thirteen years' standing, and our facilities are unequaled by any other agency in the world. The long experience we have had in preparing specifications and drawings has rendered us perfectly conversant with the mode of doing business at the United States Patent Office, and with most of the inventions which have been patented. Information concerning the patentability of inventions is freely given, without charge, on sending a model or drawing and description to this office.

Consultation may be had with the firm, between nine and four o'clock, daily, at their principal office. 128 Fulton street, New York. We established, over a year ago, a Branch Office in the City of Washington, on the corner of F and Seventh streets, opposite the United States Patent Office. This office is under the general superintendence of one of the firm, and is in daily communication with the Principal Office in New York, and personal attention will be given at the Patent Office to all such cases as may require it. Inventors and others who may visit Washington, having business at the Patent Office, are cordially invited to call at our office.

The annexed letter from the late Commissioner of Patents we commend to the perusal of all persons interested in obtaining patents:—

MESSRS. MUNN & CO.—I take pleasure in stating that while I held the office of Commissioner of Patents, MORE THAN ONE-FOURTH OF ALL THE BUSINESS OF THE OFFICE came through your hands. I have no doubt that the public confidence thus indicated has been fully deserved, as I have always observed, in all your intercourse with the Office, a marked degree of promptness, skill, and fidelity to the interests of your employers.

Yours, very truly, CHAS. MASON.

Communications and remittances should be addressed to MUNN & COMPANY, No. 128 Fulton street, New York.

MACKINTOSH & WADSWORTH'S PATENT Variable Governor Cut-off Valve, equally adapted to the common slide valve or puppet valve engines, also to the oscillating, cutting off the steam at any point, from the common current to three-fourths of the stroke, as the varying pressure of the steam in the boiler, or the varying amount of work to be done, requires. Shop, county and State rights for sale. For illustration see SCI. AM., Vol. XIII, No. 51. For full particulars address CRIDGE, WADSWORTH & CO., Pittsburgh, Pa. 3 tf

SECOND-HAND MACHINERY AT VERY low prices for cash.—Steam Engines, Slide Lathes, Planing Machines, Drills, Slotting Machines, &c.; also, a variety of Mortising, Tenoning, and Sash Machines, &c., all warranted in good running order. Address CHARLES G. WILLCOX, 87 North Third st., Philadelphia, Pa. 3 6*

ASSIGNEES' SALE—On the 16th day of October, 1858, will be sold at public sale upon the premises, in the borough of Mount Joy, Lancaster county, Pa., the Mount Joy Car and Agricultural Implement Manufactory, consisting of a two-story brick shop, 146 by 40 feet, with frame saw-mill 100 by 25 ft., and brick engine and boiler house attached, brick foundry 70 by 40 feet, warehouses, stable, &c., siding to railroad, cranes, &c. Also 50-horse engine, belting and gearings, lathes, planers, boring mills, &c., for iron and wood, and a large stock of patterns, all nearly new. Situated in one of the best agricultural districts in the Union, on the great Pennsylvania Central Railroad. For further information apply to the undersigned, assignees of Samuel Kohr and wife, at Mount Joy, aforesaid. Sale to commence at 1 o'clock, P. M. of said day. Sale of lumber, castings, and other materials, finished and unfinished work, &c., on the 18th and 19th of October next. MARTIN B. PEIFER,
3 2* JACOB R. HOFFER.

WOODWORTH PLANING MACHINES—Sash, Tenoning and Mortising Machines, Steam Engines, Slide Lathes, Drills, &c., at greatly reduced prices. Address CHARLES H. SMITH, 135 North Third st., Philadelphia. 3 6*

STEAM ENGINES, SLIDE LATHES, Planing Machines, Drills, &c.—Orders taken for all descriptions of machines for working in wood or iron. Address CHARLES H. SMITH, Machinery Depot, 135 North Third st., Philadelphia. 3 6*

RIGHTS FOR SALE—SMITH'S PATENT Feet-Warming Device, for blacksmith's use. New, useful, and just in season. Patented August 31, 1858. State rights, or the whole of the United States for sale low. Address GEORGE W. SMITH, Aurora, Dearborn co., Ind. 3 5*

TO LUMBER MERCHANTS—FOR SALE—The Pontiac Mills, Ottawa river, Canada, with extensive limits. Mill cost $150,000, but will be sold at a great sacrifice, to wind up the estate. Liberal terms of payment. Apply to JAMES DOYLE, Aylmer, C. E., HENRY McKAY, Montreal, or to GORDON & BRUCE, New York City. 2 3*

TO BRICKMAKERS—EVERY MAN WHO has witnessed our machine—when operated by only three horses it turns out the most solid and perfect bricks at the rate of sixty per minute—pronounce it not only superior, but altogether beyond and above comparison with any other in use. For particulars address the undersigned at Philadelphia.
2 4* J. W. & E. C. JAYNE.

SECOND-HAND MACHINISTS' TOOLS—Viz., Engine and Hand Lathes, Iron Planers, Drills, Chuck Lathe, Gear Cutter and Vises, all in good order, and for sale low for cash. Also one new first-class Woodworth Planing and Matching Machine. Address FRANKLIN SKINNER, Agent, 14 Whitney avenue, New Haven, Conn. 1 13

CORLISS' PATENT STEAM ENGINES—About 250, most of them from 40 to 400 horse power, are now in operation. On application, pamphlets will be sent (by mail), containing statements of responsible manufacturing companies where these engines have been furnished, for the saving of fuel, in periods varying from 2½ to 5 years. Boilers, shafting, and gearing.
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1 4* Providence, R. I.

WOODBURY'S IMPROVED WOODWORTH Planing, Tonguing and Grooving Machines, are warranted to be vastly superior to any other machines in this country. When exhibited, they have always received the highest premium. Two gold medals have been awarded. Six patents have been granted to secure the improvements on these machines.
All sizes constantly for sale, by JAMES A. WOODBURY, 69 Sudbury street, Boston. 1 8*

RIVETS.—IRON BRIDGE, SHIP GIRDER, Boiler, Tank, Tender, Gasometer, and Stove Rivets.
Railroads, Locomotive and Machine Shops, Gasometer Manufacturers, &c., supplied with every kind of rivet used in the trade.
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Pennsylvania avenue, west of 22d st., Philadelphia.
1 4*

ENGRAVING ON WOOD AND MECHANICAL DRAWING, by RICHARD TEN EYCK, Jr., 128 Fulton street, New York, Engraver to the Scientific American. 1 4*

CRIDGE, WADSWORTH & CO., MANUfacturers of improved patent Oscillating Steam Engines, with variable governor cut-off. Shop, county, and State rights for sale. Also one-half the patent for Great Britain. For illustration see SCI. AM., Vol. 13, No. 51. Circulars with testimonials, &c., sent by mail on application to CRIDGE, WADSWORTH & CO., Pittsburgh, Pa. 1 3*

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READ THIS—HUGHES' MISSOURI HAND Corn Planter—took first premium at United States Fair, September, 1857, in trial test—now challenges all others. Patented November, 1855, and September, 1857. County and State rights for sale. Send for a circular. Real estate taken in exchange for rights. Address D. W. HUGHES, Palmyra, Mo. 1 5*

EVERY MILLWRIGHT, ALL MILLOWNERS, and those interested in hydrodynamics, should become acquainted with the merits and principles of the improved Fourneyron Turbine Water Wheel, or the "Universal Turbine," a wheel the most economical in the use of water, and giving the highest percentage, with a partially raised gate, of any yet discovered. It gives from 75 to 97 per cent of power, according to the size of wheel and head employed. For information address S. K. BALDWIN,
Laconia, N. H.
N. B.—For low falls of one, two, or three feet, also for any fall, it will surpass all others. 2 13*

WARTH'S SELF-ACTING WOOD-TURNING LATHES.—The best and most practical now in use; one boy will accomplish the work of four men. State and County rights for sale. Address A. WARTH, care W. H. Bertling, 23 Chambers st., New York, or the manufacturers, who have machines of all sizes on hand. Also a general assortment of machinists tools. Circulars sent. Address CARPENTER & PLASS, 479 First ave., New York. 2 13*

WOODWORTH PLANERS—IRON FRAMES to plane 18 to 24 inches wide—at $90 to $110. For sale by S. C. HILLS, 12 Platt street New York. 1 26

IMPROVED WOODWORTH AND DANIELS' PLANING MACHINES, with Read's feed works, and Gibbs' patent oval hollow arm, made by J. A. FAY & CO., Worcester, Mass. 2 3*eow

MACHINERY.—S. C. HILLS, NO. 12 PLATT street. New York, dealer in Steam Engines, Boilers, Planers, Lathes, Chucks, Drills, Pumps; Mortising, Tenoning, and Sash Machines, Woodworth's and Daniel's Planers Dick's Punches, Presses and Shears; Cob and Corn Mills; Harrison's Grist Mills; Johnson's Shingle Mills; Belting, Oil, &c. 3 e3w

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1 5eow* No. 635 Chestnut st., Philadelphia.

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N. B.—Reliable orders filled for any part of the United States and Europe. 1 13

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STEAM ENGINES, STEAM BOILERS, Steam Pumps, Saw and Grist Mills, Marble Mills, Rice Mills, Quartz Mills for gold quartz, Sugar Mills, Water Wheels, Shafting and Pulleys. The largest assortment of the above in the country, kept constantly on hand by WM. BURDON, 102 Front street, Brooklyn, N. Y. 1 26

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VAIL'S SPEEDWELL IRON WORKS, Morristown, N. J., manufacture Craig's Patent Double-acting Balance Valve Oscillating Steam Engines both stationary and portable, Knowles' Patent Muley, Portable, Gang and Re-sawing Mills, Sugar and Chinese Cane Mills and Sugar Pans, Grist Mills, Mill Irons, Rich's Water-wheels, Forgings and Castings. Orders for the above, and all descriptions of labor-saving machinery will receive prompt attention.
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LAP-WELDED IRON BOILER TUBES—Prosser's Patent.—Every article necessary to drill the tube-plates and set the tubes in the best manner.
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CARY'S CELEBRATED DIRECT ACTING Self-Adjusting Rotary Force Pump, unequalled in the world for the purpose of raising and forcing water, or any other fluid. Manufactured and sold by CARY & BRAINARD, Brockport, N. Y.
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PECK'S PATENT DROP PRESS—ALL sizes, used for stamping copper or tin ware, silver ware ornaments, spoons, &c., and for forging gun work, lock work, carriage clips, &c. Also power and foot punching presses, and oval die chucks. Manufactured by MILO PECK & CO., 3 Whitney avenue, New Haven, Conn. 1 14*

STEAM WHISTLES—IMPROVED PATterns for locomotive and stationary engines. A large assortment constantly on hand. Manufactured by HAYDEN, SANDERS & CO.,
1 5* 306 Pearl st., New York.

5,000 AGENTS WANTED—TO SELL four new inventions. Agents have made over $25,000 on one. Better than all other similar agencies. Send four stamps and get eighty pages particulars, gratis. EPHRAIM BROWN,
1 5* Lowell, Mass.

IRON AND COMPOSITION CASTINGS, Chilled Rolls, Mill Gearing, Fan Blowers, Trip Hammers, Shafting, Shears, Presses, India Rubber Calenders, Grinding and Cutting Machines, Turbine and Center-vent Water Wheels, also contracts made for Breast and Overshot Wood Wheels, also orders taken for the manufacture of patented machinery of all kinds, by the BIRMINGHAM IRON FOUNDRY, Birmingham, Conn.
1 tf SHELDON BASSETT, President.

J. & WM. W. CUMBERLAND'S IMPROVED Patent Metallic Oil, for machinery and burning. Warranted to last longer than sperm oil. Manufactured only by the New York Cumberland Metallic Oil Works, foot of East 24th st. Office, No. 205 Broadway, New York. Under the inventor's superintendence. N. B.—See that our brand "New York Cumberland Metallic Oil Works, foot of East 24th street," is upon every package, however small. 1 10*

GUILD & GARRISON'S STEAM PUMPS for all kinds of independent steam pumping, for sale at 55 and 57 First street, Williamsburgh, L. I., and 301 Pearl street, New York.
1 10* GUILD, GARRISON & CO.

WELLINGTON MILLS EMERY—CONsumers will look for copyright label on each cask, by whomsoever sold, and they will be sure of the best emery. Casks contain 200 pounds each. Testimonials of its superiority from Collins' Axe Co., and many others. GEO. H. GRAY & DANFORTH,
1 9* Boston, Mass.

These machines have no rival.—[Scientific American.

WHEELER & WILSON'S SEWING MACHINES, 343 Broadway, New York, received the highest premiums awarded in 1857 by the American Institute, New York; Maryland Institute, Baltimore; and at the Maine, Connecticut, Illinois, and Michigan State Fairs. Send for a circular containing editorial and scientific opinions, testimonials from persons of the highest social position, &c. 1 tf

IRON PLANERS AND ENGINE LATHES of all sizes, also Hand Lathes, Drills, Bolt Cutters, Gear Cutters, Chucks, &c. on hand and finishing. These tools are of superior quality, and are for sale low for cash or approved paper. For cuts giving full description and prices, address "New Haven Manufacturing Co., New Haven, Conn." 1 13

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Science and Art.

Manley's Preserve Can.

The cause of decomposition in fruit, vegetables, meat, &c., is the oxygen of the atmosphere or water, by which they may chance to he surrounded, and to preserve them it is necessary that they shall be enclosed in perfectly air-tight cases. Many kinds of cans, jars, and other contrivances, have been invented for this purpose, but not one surpasses the subject of our description for cheapness of construction or simplicity and perfection.

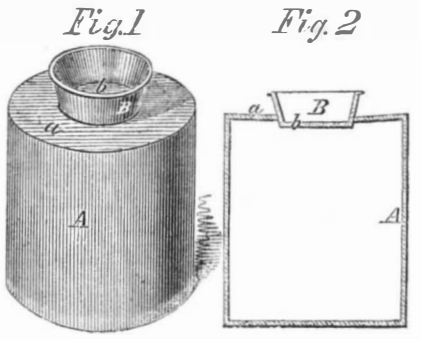


Fig. 1 is a perspective view, and Fig. 2 a section of this can, from which at once its simplicity will be seen.

The cover, B, being removed, the substances to be preserved are placed in the can, A, which is then placed in hot water, the heat expels all the air from the inside, and the cover is placed in a hole stamped in the top, *a*, to receive it, fusible cement in then poured round it, and cold water poured in the cup, *b*, of the top, B; this instantly cools the cement, and the can can be removed from the hot water without the fear of any air entering the can. The cover is made slightly inclined towards the center, to hold the cement, and fit snugly to the cover, B. When it is desired to open the can little trouble is necessary, it only being requisite to pour hot water into the cup, *b*, of the cover, B, which melts the cement, and the cover can be removed without there being any danger of the water getting inside. They are made of tin plate, and can be used very many times, so that they are ever ready, and not destroyed with once using.

It is difficult to find any particular feature to praise, as in every way they are the very perfection of preserve cans, and are the invention of E. Manley, of Marion, N. Y., who patented them August 3d, 1858, and from whom any further information may be obtained.

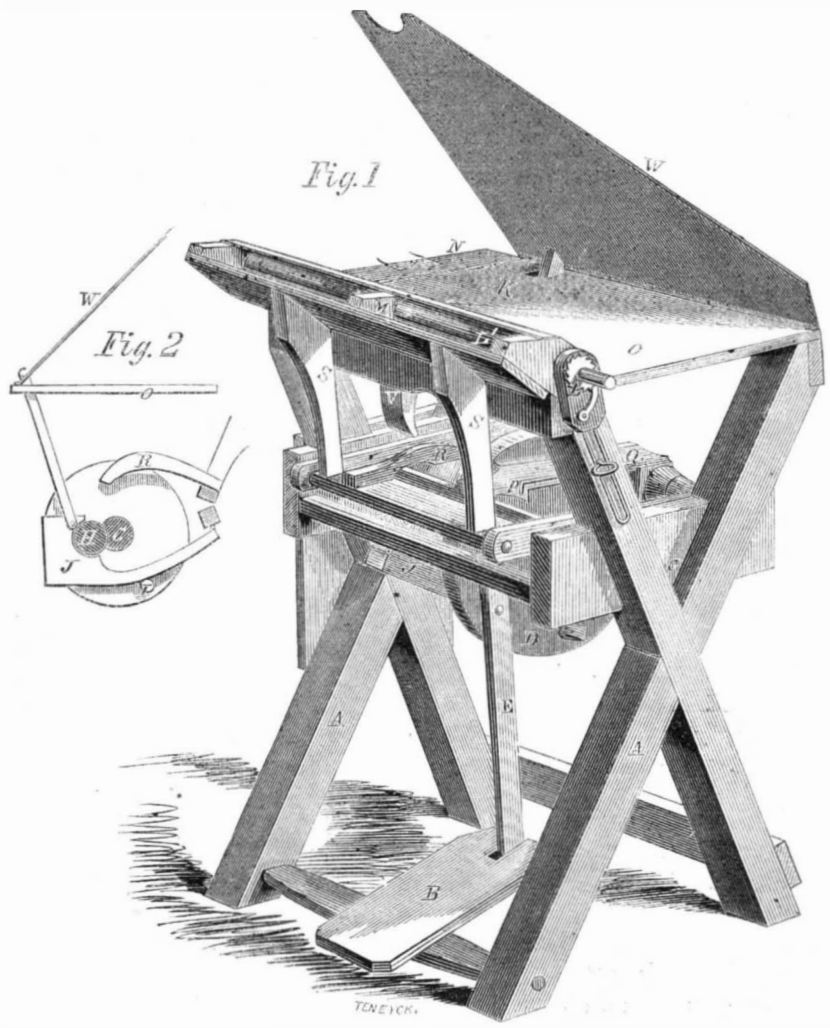
Paper Bag Machine.

Paper bags are much used as convenient and cheap packing cases for light articles or small quantities of any substance, and although they are so cheap and apparently insignificant, yet there has been much ingenuity displayed in devising machines for their manufacture. The machine, of which our engraving (Fig. 1) is a perspective view, is the invention of Jacob Keller, of Fairview township, Pa., and is intended to make those three-cornered bags which are so commonly used in our grocery stores and other places to contain sugar, candies, &c. By referring to the illustrations, in which (Fig. 2) are some of the parts separated, to show the operation, the machine will be understood.

A is the frame, B the treddle, which is worked up and down by the foot, C the shaft, upon which is a flanged wheel, connected by a pin with shaft, E, also attached to D. On the flanged wheel, D, is a roller, H, and opposite H is a pin, I, projecting from D. J is a lever underneath, which is operated on by the roller, H, and is attached by a wire to the folding frame, K, above, upon which the bag is formed or folded. L′ is the roller which holds the paste, having a sliding feeder M, attached to the cover. L is a pawl and ratchet for turning the paste roller. N and O are two folders attached to the top, forming a square table with hinges, so as to be thrown over by the hand of the operator at right angles, and connect the sides of the bag after the roller has deposited the paste on the front edge of the paper, next to the paste roller, L′. P is a spring catch, in the center of the machine, immediately above and across the shaft, C, having its front end beveled at the side, to correspond with beveled point of the pin, I. At the back end of this spring catch, P, is a small spiral spring, and a lever, R, extends from the upright movable frame, S, that supports paste roller, L′, and is operated by a short lever in the center of the machine. A short lever or lug is permanently attached to and projects from the lower part of the movable frame, S, and as it is brought in contact with a corresponding lug, V, projecting downward from the frame, A, the paste roller, L′, is thrown forward on the paper at top. The pin, I, on the flange wheel, D, then presses against the lower end of the short lever, by which the lever, R, and the frame, S, with its paste roller, L′, is thrown back. The paper is thus pasted together in a triangular shaped bag upon the fly lid, W, at top, which operates on ordinary hinges. The paper having an oblong shape was first laid on the top (on folders, N and O, forming the table), with its left side edge projecting about an inch over. The front edge of the paper being placed on a line with the front edge of the top, and on a line with the paste roller, L′. The paper being laid thus smooth and flat on the top, the operator presses upon the treddle, B, and the flanged wheel, D, is partly revolved, until its pin, I, raises the spring catch, P, at the same time fly lid, W, falls down upon the paper at top, the movable frame, S, is thrown forward, and the paste roller, L′, deposits the paste on the front edge of the paper. The short lever then operates on the long lever, R, and the movable frame, S, is thrown back, with its paste roller, L′, and the spiral spring brings the devices of the machine back to their places, to perform another pasting operation.

This machine is simple and effective, and was patented by the inventor March 2d, 1858. All further information can be obtained by addressing B. F. Koller, Shrewsbury, Pa.

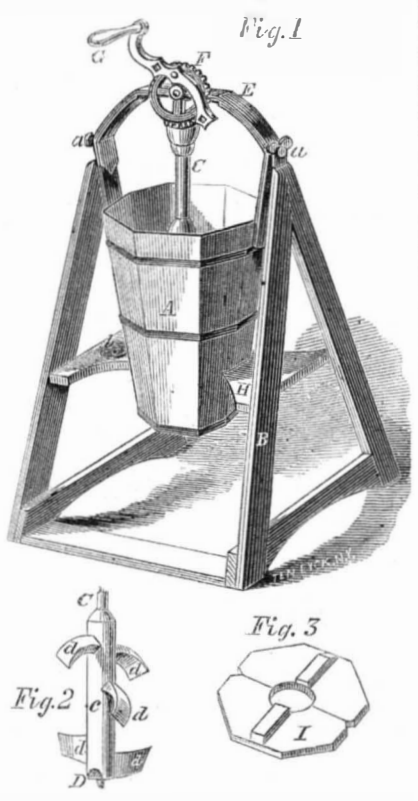
KELLER'S BAG-MAKING MACHINE.



Smith's Butter-Worker.

This is a churn and butter-worker combined, and makes the several operations of butter-making one continuous and easy process. The cream is placed in the churn and taken out as butter, perfectly worked, salted, and ready for the market.

In our engravings Fig. 1 is a perspective view of the invention, in which A is the churn, suspended by bars and frame, E, and pivots, *a*, on the frame, B. The churn can swing in B when desired, but while being worked it is retained in an upright position by the board, H, and a catch, *b*. C is the working shaft (seen better in Fig. 2), having on the end that is placed in the churn an enlargement, *c*, from which project a series of dashers, *d*, of the shape or form shown in the engraving. These dashers, a though projecting horizontally from *c*, and having an horizontal rotary motion through the cream, yet by their shape they produce the same effect as the ordinary dash churn.



C terminates in a pivot that rests in a shoe in the bottom of the churn, and there is a small cavity, D, in *c*, through which the buttermilk, on account of its thinness, can run into a vessel placed under the churn to receive it, but the cream or butter, on account of their consistency, cannot escape. The shaft, C, and dashers are rotated by the bevel gearing, F, and handle, G. The handle, G, has three square holes in it, either of which can be fitted to the wheel as represented in Fig. 1, so that more or less leverage can be had by the operator as the butter becomes harder, and more difficult to work. By fitting the handle on to a crank pin, or on to a central pin, the operator can obtain five different lengths of leverage, so that he or she does not have any more hard work, as the buttermilk is being squeezed out, and the salt worked in. Fig. 3 shows the cover, I, which is in two parts.

This churn renders the operation of churning and preparing butter for the market very simple and easy, and is the invention of Justin M. Smith, of Lyme, Conn., from whom any further information can be obtained. It was patented January 12, 1858.

LIGHT AND HEAT.—During the illumination in Albany, N. Y., on the 1st inst., a cauldron was filled with dry granulated fire-clay, and gas was allowed to flow through it. It gave out a light equal to 1,000 sperm candles, and generated an intense heat. It would be a good plan to employ gas in this manner for cooking, as dry fire-clay concentrates, and thus economizes the heat.

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